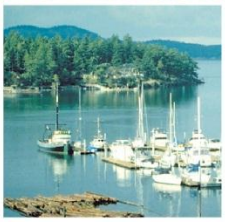
NATURAL RESOURCES



Economic and Revenue Forecast

First Quarter
Fiscal Year 2013

September 2012

WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark - Commissioner of Public Lands

Acknowledgements

The Washington Department of Natural Resources' (DNR) *Economic and Revenue Forecast* is a collaborative effort. It is the product of information provided by private individuals and organizations, as well as DNR staff. Their contributions enhance the quality of the Forecast.

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Thanks also go to DNR staff who contributed to the Forecast. Kristin Swenddal, Paul Bialkowski, Chris Hanlon-Meyer, Rick Roeder, Tom Shay, Randy Niessner, Julie Sandberg, Tom Heller, Dave Gordon, and Pam Barkis provided data and counsel, including information on revenue flows in their areas of responsibility, which contributed to the accuracy of the Forecast. Robert Brauer and Dorian Smith reviewed a draft of the Forecast. Luis Prado designed the front cover.

In the final analysis, the views expressed are our own and may not necessarily represent the views of the contributors or reviewers.

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Hard copies of this Forecast are available upon request from:

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Economic and Revenue Forecast

Fiscal Year 2013 – First Quarter

Prepared by
Craig Calhoon, Economist
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DNR Office of Budget and Economics

WASHINGTON STATE DEPARTMENT OF
Natural Resources
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Acronyms and abbreviations

bbf	Billion board feet
BLS	U.S. Bureau of Labor Statistics
CAD	Canadian dollar
CNY	Chinese yuan (renminbi)
CPI	Consumer Price Index
CY	Calendar Year
DNR	Washington Department of Natural Resources
ECB	European Central Bank
FDA	Forest Development Account
Fed	U.S. Federal Reserve Board
FOMC	Federal Open Market Committee
FY	Fiscal Year
GDP	Gross Domestic Product
HMI	National Association of Home Builders/Wells Fargo Housing Market Index
IMF	International Monetary Fund
ISM	Institute for Supply Management
LVL	Laminated Veneer Lumber
mbf	Thousand board feet
mmbf	Million board feet
NAFTA	North American Free Trade Agreement
OPEC	Organization of Petroleum Exporting Nations
PPI	Producer Price Index
Q1	First quarter of year (similarly, Q2, Q3, and Q4)
QE	Quantitative Easing
RCW	Revised Code of Washington
RISI	Resource Information Systems, Inc.
RMCA	Resource Management Cost Account
SA	Seasonally Adjusted
SAAR	Seasonally Adjusted Annual Rate
USD	U.S. Dollar
USFS	U.S. Forest Service
WDFW	Washington Department of Fish and Wildlife
WWPA	Western Wood Products Association
WTO	World Trade Organization

Preface

This *Economic and Revenue Forecast* projects revenues from Washington state lands managed by the Washington State Department of Natural Resources (DNR). These revenues are distributed to management funds and beneficiaries as directed by statute. The Forecast revenues are organized by source, fund, and fiscal year.

DNR revises its Forecast quarterly to provide updated information for trust beneficiaries and state and department budgeting purposes. See the Forecast calendar at the end of this section for release dates. We strive to produce the most accurate and objective forecast possible, based on current policy direction and available information. Actual revenues depend on DNR's future policy decisions and changes in market conditions beyond our control.

This Forecast covers fiscal years 2013 through 2017. Fiscal years for Washington State government begin July 1 and end June 30. For example, Fiscal Year 2013 runs from July 1, 2012 through June 30, 2013.

The baseline date (the point that designates the transition from "actuals" to forecast) for this Forecast is August 1, 2012. The forecast numbers beyond that date are based on the most up-to-date DNR sales and revenue data available, including DNR's timber sales results through August 2012. Macroeconomic and market outlook data and trends are the most up to date available as the Forecast document is being written.

Unless otherwise indicated, values are expressed in nominal terms without adjustment for inflation. Therefore, interpreting trends in the Forecast requires attention to inflationary changes in the value of money over time separate from changes attributable to other economic influences.

Each DNR Forecast builds on the previous one, emphasizing ongoing changes. Before preparing each Forecast, world and national macroeconomic conditions and the demand and supply for forest products and other commodities are re-evaluated. The impact on projected revenues from DNR-managed lands is then evaluated, given the current economic conditions and outlook.

DNR Forecasts provide information used in the *Washington Economic and Revenue Forecast* issued by the Washington State Economic and Revenue Forecast Council. The release dates for DNR Forecasts are determined by the state's Forecast schedule as prescribed by RCW 82.33.020. The table below shows the anticipated schedule for future *Economic and Revenue Forecast*s.

Economic Forecast Calendar

Forecast Title	Baseline Date	Draft Revenue Data Release Date	Final Data and Publication Date (approximate)
November 2012	October 1, 2012	Nov. 7, 2012	Nov. 30, 2012
March 2013	February 1, 2013	March 6, 2013	March 29, 2013
June 2013	May 1, 2013	June 5, 2013	June 28, 2013
September 2013	August 1, 2013	September 9, 2013	September 30, 2013

Introduction and Forecast Highlights

U.S. Economy and Housing Market. The U.S. economy, which showed several encouraging signs of recovery early this year, has since proceeded in fits and starts. Although the unemployment rate has generally moved down since the end of 2009 and stands at 8.1 percent as of August, the workforce has also grown smaller and the average duration of unemployment remains stuck at about 40 weeks. There are now 4.1 million more jobs than at the end of 2009, but almost 200,000 fewer than in June of this year. New housing starts are slowly climbing up from the historically low and flat level of the last three years. Despite promising trends in the housing market, the fragile economy faces serious challenges: there are still too many unemployed workers, and state and local government cutbacks continue; the European financial crisis drags on, though recent ECB policies may improve things; China's economy is slowing; political gridlock has paralyzed Washington D.C.; and the November elections loom large on business and investment optimism.

Forecast Period Extended. Starting with this forecast, FYs 2016 and 2017 will be added to the forecast period.

Log and Lumber Prices. Pacific Northwest log prices continue to hold relatively steady. The price for a "typical" DNR log delivered to the mill averaged $473/mbf over the first eight months of 2012, down slightly from $481/mbf for all of 2011. West Coast lumber prices are up from last year: the Random Lengths' Coast Dry Random and Stud composite lumber price averaged $297/mbf for the first seven months of 2012, compared with $270/mbf for all of 2011.

Timber Sales Volume. Except for FY 2013, projected sales volumes for FYs 2013-2015 follow the June 2012 Forecast. Projected timber sales volume for FY 2013 is revised downward from 580 mmbf to 560 mmbf to account for increased complexity in preparing harvest units for sale. Timber sales volume for FY 2015, which is part of the next sustainable harvest decade, was reduced by 10 mmbf to 587 mmbf, reflecting a lowered projection for Eastside sales. Sales volumes for FYs 2016 and 2017 are each predicted to be about 587 mmbf.

Timber Sales Prices. DNR's timber sales prices averaged $296/mbf in FY 2012, compared with $339/mbf for FY 2011. The FY 2013 average sales price is predicted to be about $280/mbf. Based on estimates of the timber mix to be offered for sale and on increasing confidence in a genuine (albeit slow) recovery in the U.S. housing market, we forecast timber sales prices will be $315/mbf in FY 2014, $335/mbf in FY 2015, $319/mbf in FY 2016, and $308/mbf in FY 2017.

Timber Removal Volume and Prices. FY 2012 is now complete, and timber removal volume—at 511 mmbf for the year—was below the much higher levels in the two previous fiscal

years. However, the average FY 2012 removal price was up to $321/mbf, bolstered by FY 2011's average sale price of $339/mbf. FY 2013's 20 mmbf reduction in timber sales volume will only modestly affect total removals. Although a portion will be felt in this fiscal year, most will affect FY 14 since removals lag behind sales. Removal volumes for FYs 2013-2017 are forecast to be 538, 582, 601, 581, and 587 mmbf respectively. Projected timber removal prices are forecast to be $283, $291, $311, $325, and $320/mbf for each of the fiscal years in the forecast period.

Bottom Line for Timber Revenues. Projected price increases will temper the effect of the 20 mmbf decrease in FY 2013 timber sales volume on revenues in the first three years of the forecast period. The timber revenue projection for the 2011-2013 Biennium is revised downward two percent from $323.3 million to $320.1 million. For the 2013-2015 Biennium, the projected revenue from timber removals is revised up four percent from $341.7 million to $356.5 million. Revenues for the 2015-2017 Biennium are predicted to be $376.8 million.

Uplands and Aquatic Lands Lease (Non-Timber) Revenues. In addition to revenue from timber removals on state lands, DNR also receives sizable revenues from managing leases on for uplands and aquatic lands. FY 2012 had generated the highest revenues on record from agricultural and other upland leases ($26.6 million), commercial properties ($10.3 million), and aquatic lands ($39.6 million).

Compared to the previous forecast, revenues from agricultural and other upland leases are forecast to increase three percent to $24.7 million for FY 2013, six percent to $23.8 million for FY 2014, and six percent to $24.3 million for FY 2015. Forecast revenues for FY 2016-2017 are $24.7 million and $25.0 million, respectively. There is no change in the predicted $9.5 million in commercial lease revenues for FY 2013. Revenues in outlying years are forecast to be modestly higher.

Estimated aquatic lands revenues are lowered by four percent to $29.7 million in FY 2013, by two percent to $30.1 million in FY 2014, and by one percent to $31.0 million in FY 2015. These reductions reflect the return of price volatility in the geoduck market, uncertain and possibly flagging demand from China, and the results of the August 2012 geoduck auction. The August auction's average price per pound was the lowest in over three years and formed part of a three-auction downward trend. Forecast aquatic revenues for FYs 2016 and 2017 are $31.9 million and $32.8 million, respectively.

Total Revenues. Total 2011-2013 Biennium revenues are projected to be $460.6 million, down $2.6 million (0.5 percent) from the June 2012 Forecast. For the 2013-2015 Biennium total revenues are projected to be $484.5 million, up $16.8 million (four percent) from the previous projection. Revenues for the 2016-2017 Biennium are expected to total $510.0 million.

Risks to the Forecast. On the upside, there is a chance of a quicker and stronger recovery in the U.S. housing market. Falling short of projected timber sales volumes due to potential environmental and policy issues remains the largest risk to the Forecast. Also on the downside are the many challenges to U.S. economic recovery cited in the opening paragraph above.

Part 1. Macroeconomic Conditions

This section briefly reviews current and predicted conditions in the United States and world economies, because they affect the bid prices for DNR timber sales as well as lease revenues from DNR-managed uplands and aquatic lands.

International supply and demand also affect domestic timber stumpage and lumber prices. On the supply side, for example, Canada has a strong influence on the U.S. wood products sectors because it is a major source of lumber entering U.S. markets. On the demand side, China is an important market for commodities including logs and geoducks.

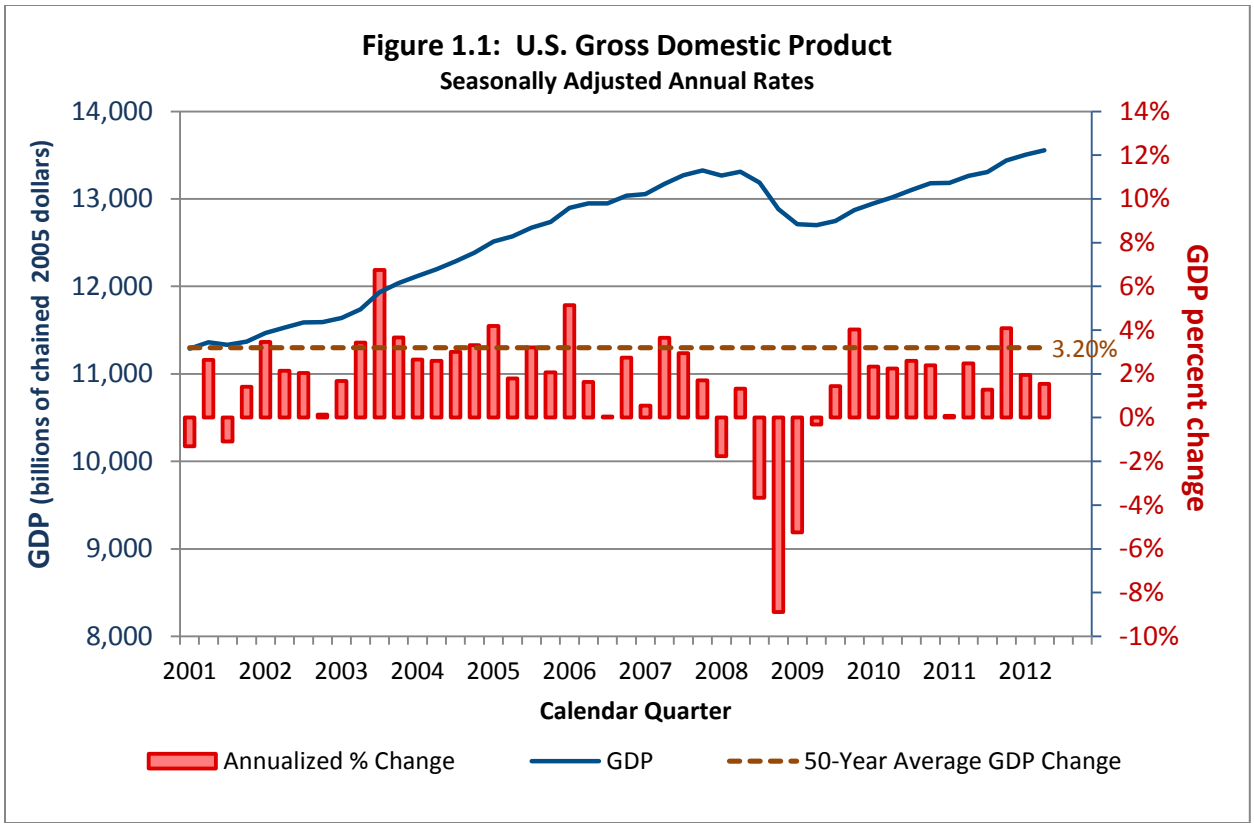
Unless otherwise noted, all years in this section are calendar years.

U.S. economy

Gross Domestic Product (GDP). GDP is the total output of goods and services produced by labor and property located in the United States, minus inflation. **As Figure 1.1** shows, GDP actually fell in five out of six quarters in 2008 and the first half of 2009. The worst quarters for GDP decline during the Great Recession were Q4 2008 and Q1 2009, at rates of -8.9 percent and -5.2 percent respectively. It took almost four years—until Q4 2011—for real GDP to return to its pre-recession peak (Q4 2007).

Since mid-2009, GDP has shown positive, if rather tepid, growth. In the last three years, GDP growth has averaged 2.2 percent on an annual basis, compared with an annualized average of 3.2 percent over the last 50 years. The growth tapered down to 2.0 and 1.5 percent in the first two quarters of 2012.

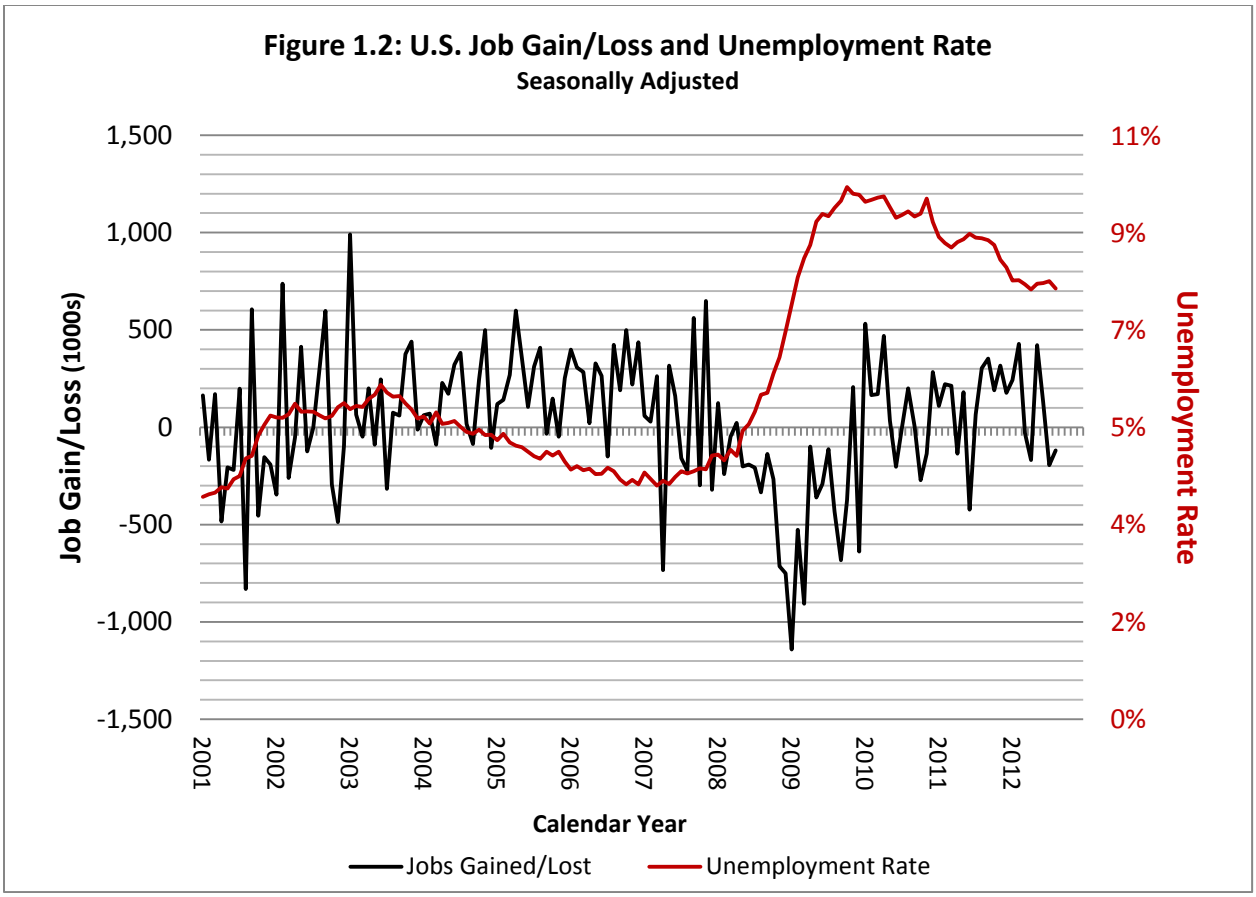
The Blue Chip Consensus projections are revised from 2.1 to 2.2 percent for 2012 and from 2.4 to 2.1 percent for 2013.



Employment. As shown by the red line in **Figure 1.2**, the national unemployment rate has been unsteadily falling from its high point of 10.1 percent in October 2009 to 8.1 percent in August 2012. Job growth has improved from a year ago but, despite May's strong showing (422,000 new jobs), July and August posted a combined loss of 314,000 jobs. As described below, the improved unemployment rate is not due to increased employment but rather to a shrinking workforce, among other factors.

The alternative unemployment rate, U-6, measures unemployment, involuntarily part-time employment, and marginally attached workers, and so provides a more complete picture than August's 8.1 percent headline rate. The U-6 reached 14.7 percent in August, down slightly from May but significantly higher than the 8.3 percent 2006-2007 average.

If not for the lack of growth in the labor force, the U.S. unemployment rate would be even higher. The labor force usually grows 0.7 percent each year due to population—growth (natural increase plus net immigration), but the total number of persons in the labor force has been relatively stagnant in the last 3.5 years, with losses in July and August 2012 amounting to 518,000 (about a 0.3 percent decline from May). Many discouraged Americans have dropped out of the labor force and have stopped looking for work and so are excluded from these indicators. In addition, the recession has slowed population growth by slowing immigration. There is even evidence that it has also lowered the U.S. birth rate.



The recession also expanded the ranks of the long-term unemployed to an extent not seen since the Great Depression. In May, more than 5.4 million people were unemployed for over six months (an improvement over the peak of 6.7 million in May 2010) and the average duration of unemployment was 39.7 weeks—still near the record high of 40.9 weeks in November 2011. In August, the ranks of the long-term unemployed had decreased to 5 million and the average duration of unemployment had improved slightly to 39.2 weeks. This contrasts with the 18.2 weeks average from 2003 through 2007.

"The weak job market should concern every American. High unemployment imposes hardship on millions of people, and it entails a tremendous waste of human skills and talents. Five million Americans have been unemployed for more than six months, and millions more have left the labor force--many of them doubtless because they have given up on finding suitable work. As the skills of the long-term unemployed atrophy and as their connections to the labor market wither, they may find it increasingly difficult to get good jobs, to their and their families' cost, of course, but also to the detriment of our nation's productive potential."

Ben Bernanke
Chairman, Federal Reserve
September 13, 2012

Consumption. Real personal consumption expenditures increased 0.4 percent in July 2012, compared with a net decrease of 0.4 percent from March through June. Spending on durable goods increased 1.1 percent. Consumer spending on services increased by only 0.3 percent.

American consumers' confidence has been deeply shaken. Continued uncertainty about the U.S. economic recovery and prevalent unemployment fears continue to restrain their spending. Furthermore, employed Americans are paying off debt and saving rather than consuming. The household debt service ratio for the first quarter of 2012 is 10.98, the lowest level since 1994.

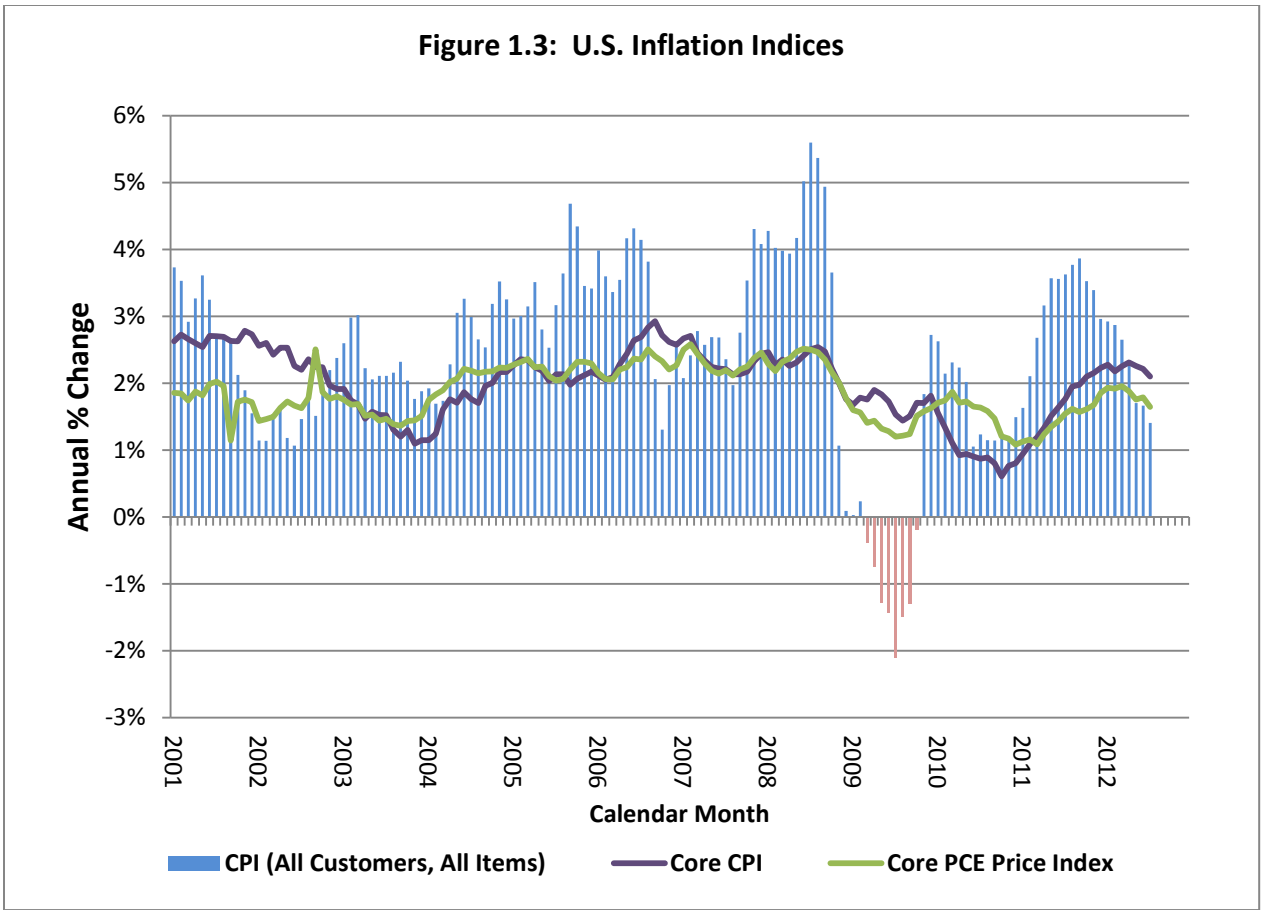
On September 13, 2012, the Federal Reserve announced a new round of open-ended quantitative easing ("QE3") to stimulate the economy and spur job growth. Unlike previous one-time efforts, in this new scheme the Federal Reserve will purchase about $40 billion in mortgage-backed securities each month until the employment situation substantially improves. While opinions differ, there is some consensus among economists that such monetary easing can increase employment, especially if it is were accompanied by more amenable fiscal policies.

Interest Rates. U.S. interest rates remain at or near record lows. The Federal Reserve funds rate has remained in the 0.0-0.25 percent range since December 2008 and the FOMC has pledged to keep rates near zero through mid-2015. Ten-year U.S. Treasury bonds closed at 1.57 percent on August 31.

Average rates on closed conventional 30-year fixed rate mortgages were at a historic low of 3.78 percent in July and have been mostly declining since the middle of 2008 (see **Figure 2.4**).

Inflation. Figure 1.3 shows several measures of the U.S. inflation rate. The bars—representing headline inflation, measured by year-over-year changes in the Consumer Price Index (CPI)—show that consumer prices in the United States fell precipitously beginning in September 2008. The CPI did not recover to its August 2008 level until December 2010. In effect, inflation was zero over that two year period. The CPI increased through the first three quarters of 2011 but declined every month since then. It stood at 1.4 percent in July. In theory, the Fed's new QE3 actions will exert an upward pressure on inflation, but it is unlikely to have an appreciable effect on inflation in the short term, or until there is no longer an excess supply of savings.

Figure 1.3 also shows two alternative measures of inflation—core CPI and the core personal consumption expenditures (PCE) price index—that exclude purchases of historically volatile goods such as energy and food and provide a more realistic measure of underlying long-term inflation. The PCE price index is preferred by the Federal Reserve; it shows that long-term inflation has been below 2 percent since late 2008.

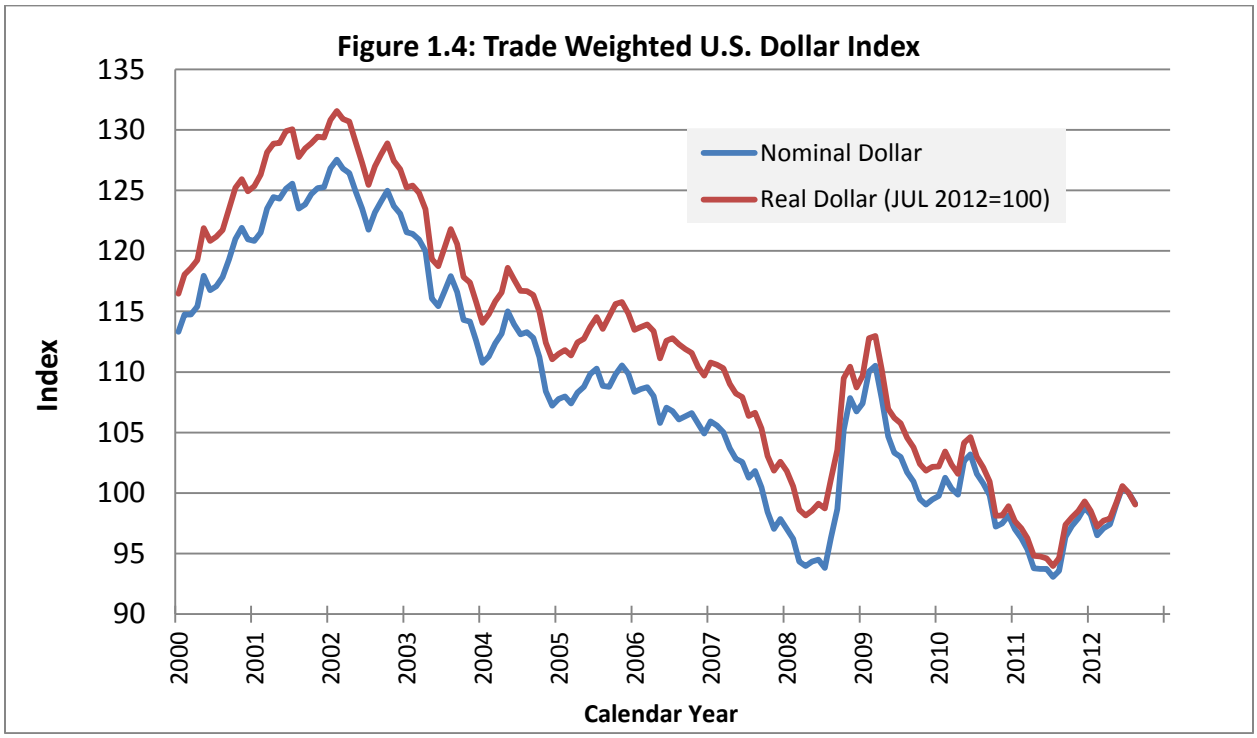


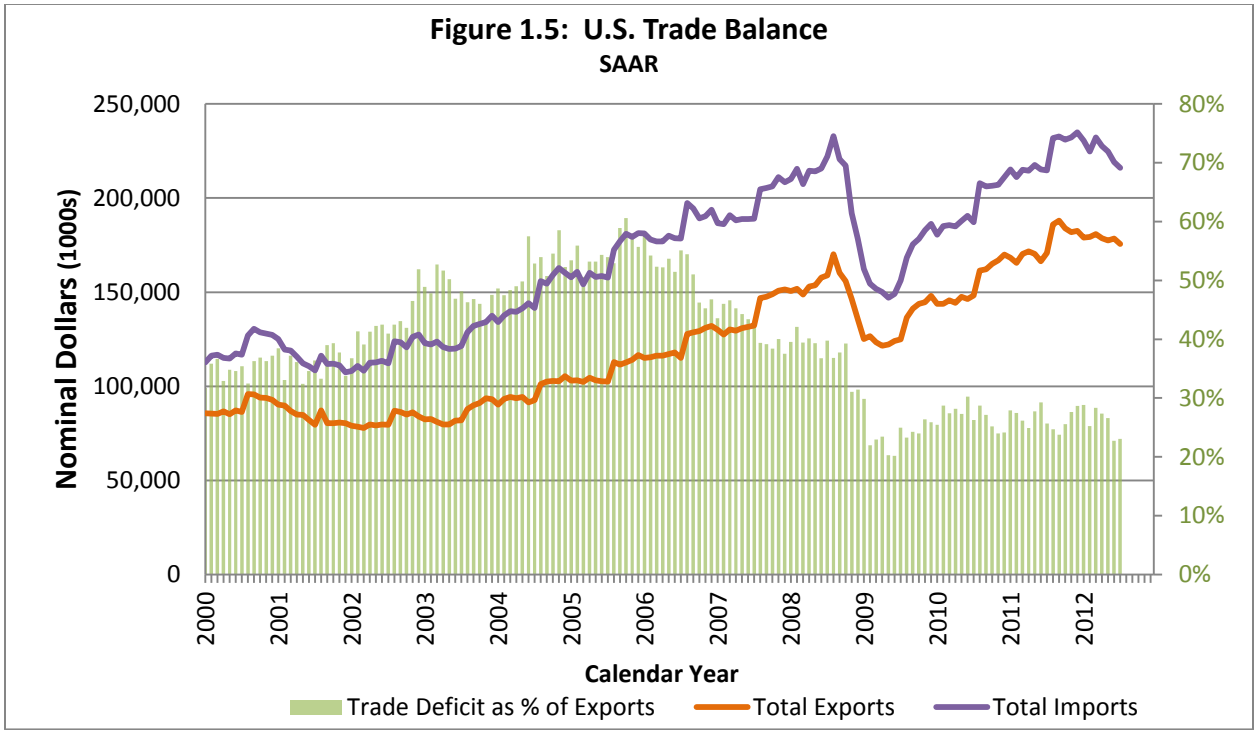
The U.S. Dollar and Foreign Trade. **Figure 1.4** shows the broad trade-weighted U.S. dollar index for the last 12 years. The broad index is a weighted average of the foreign exchange values of the U.S. dollar against the currencies of a large group of major U.S. trading partners. In July 2011, the index in nominal and real terms fell to its lowest point in the history of the data series, which began in January 1973. At its low, the (real) U.S. dollar index was 29 percent below its early 2002 highpoint. Since July 2011, the dollar has mostly strengthened off the bottom, but dropped off modestly in July and August of this year.

Declines in the dollar's trade value make American goods cheaper and more competitive relative to foreign goods. This supports U.S. exports, boosting economic growth. However, it also leads to higher prices for imports which is part of why oil and gasoline prices increased in dollar terms from 2009 through much of 2011 (see **Figure 1.6**).

In 2011, the total U.S. trade deficit was $560 billion—the difference between $2.1 trillion in exports and $2.7 trillion in imports. The United States actually had a $179 billion surplus on trade in services but this was outweighed by the much larger $739 billion deficit on trade in goods. As **Figure 1.5** shows, the U.S. trade deficit as a percentage of exports was about 27 percent—virtually unchanged from 2010. The deficit mostly narrowed through 2012 and in July the deficit, as a percent of exports, was at its lowest level since August 2009. Due to our economy's thirst for crude oil, the trade item which makes far and away the largest contribution

to the trade deficit is petroleum products—lower oil prices explain much of the reduction in the trade deficit in 2012 (see **Figure 1.6**).





World economy

The U.S. economy does not exist in isolation and the world is becoming more economically interconnected. World events and the performance of other countries' economies impact, for better and for worse, the U.S. economy.

Europe. Europe is now in recession. The European crisis—a combination of a sovereign debt crisis and a financial crisis—has not improved unambiguously from the last Forecast, and the uncertainties surrounding the Greek drama are much the same as they were then. Fear that the continued erosion of the much larger peripheral economies of Spain and Italy will collapse the center still lingers. Most interventions to date have been limited in scope and appear to be only stop-gap measures to buy time. They included austerity policies imposed nationally or as loan terms, minor write-offs of bad debt, European Central Bank (ECB) cash infusions to markets, EU loans to governments, and others. The ECB has recently proposed a plan to lower borrowing costs for fragile European governments. Called the Outright Monetary Transactions scheme, it will buy up unlimited amounts of bonds of less than three year's maturity in exchange for agreement to certain economic reforms. It is unclear whether these reforms and the upcoming improvements to government liquidity will rectify the structural problems in the Eurozone and EU that allowed and now perpetuate the crisis, but bond markets have rallied since the ECB's announcement.

China. China's economy has been slowing slightly, with a GDP growth rate of 9.2 percent in 2011 compared with 10.3 percent in 2010. In its February 6 China Economic Outlook, the International Monetary Fund (IMF) cut its forecast for China's 2012 growth rate from 9.0 to 8.2 percent, based on internal issues such as higher commodity prices, higher inflation rates, and possibly a housing bubble. In March, Premier Wen Jiabao cut the 2012 growth target to 7.5 percent. In recent years, China's housing construction exceeded demand, so construction is currently down, home prices are falling, sales volume is down, and inventories are accumulating (similar to recent U.S. experience). The IMF economic report indicates that China's growth rate will drop even more abruptly if Europe experiences a sharp recession (because it depends heavily on exports to the West) but a "track record of fiscal discipline has given China ample room to respond to such an external shock."

There has been much discussion and speculation of a coming "hard landing" for China's economy, but the data and prospects are inconclusive. As in the United States, much depends on policy choices.

Petroleum. Crude oil prices and supply play an important role in the world and U.S. domestic economies, since crude oil and its derivatives affect production, transportation, and consumption. In addition, oil prices—especially fluctuations—have the ability to influence intangible forces such as consumer and producer confidence. **Figure 1.6**, which presents six years of oil prices by the two most important indicators, shows that the most dramatic crude oil price drop since 2008 was this year. These data have been adjusted for seasonality, so there is nothing seasonal about this trend. The lower petroleum prices have been one of the few points of optimism in the world economy, but prices are currently back on the rise.

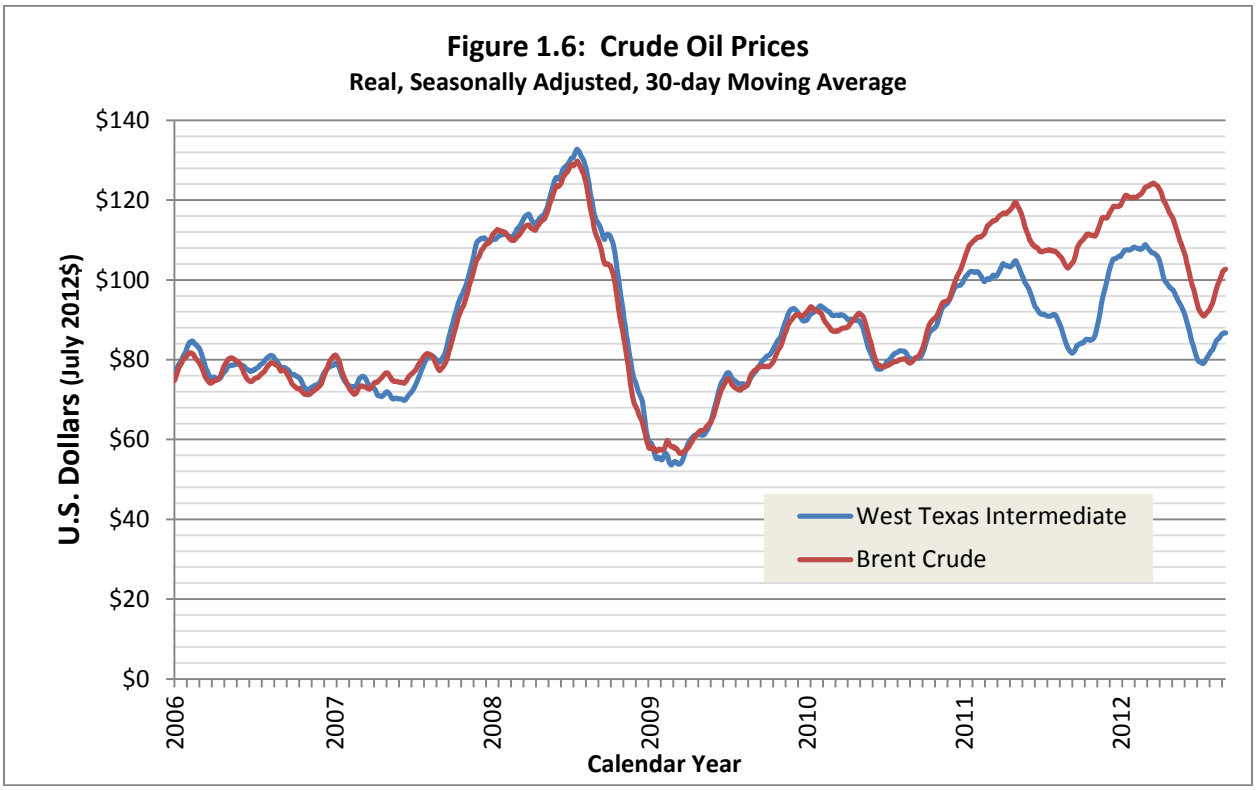


Figure 1.6: Crude Oil Prices
Real, Seasonally Adjusted, 30-day Moving Average
U.S. Dollars (July 2012$)
$140
$120
$100
$80
$60
$40
$20
$0
2006
2007
2008
2009
2010
2011
2012
Calendar Year
West Texas Intermediate
Brent Crude

Part 2. Log and Lumber Industry Factors

This chapter focuses on specific factors that affect timber stumpage prices and overall timber sales revenues received by the Washington State Department of Natural Resources (DNR). Timber stumpage prices reflect demand for lumber and other wood products, timber supply, and regional and local lumber mill capacity. The demand for lumber and structural wood products is directly related to the demand for U.S. housing and other end-use markets.

U.S. housing market

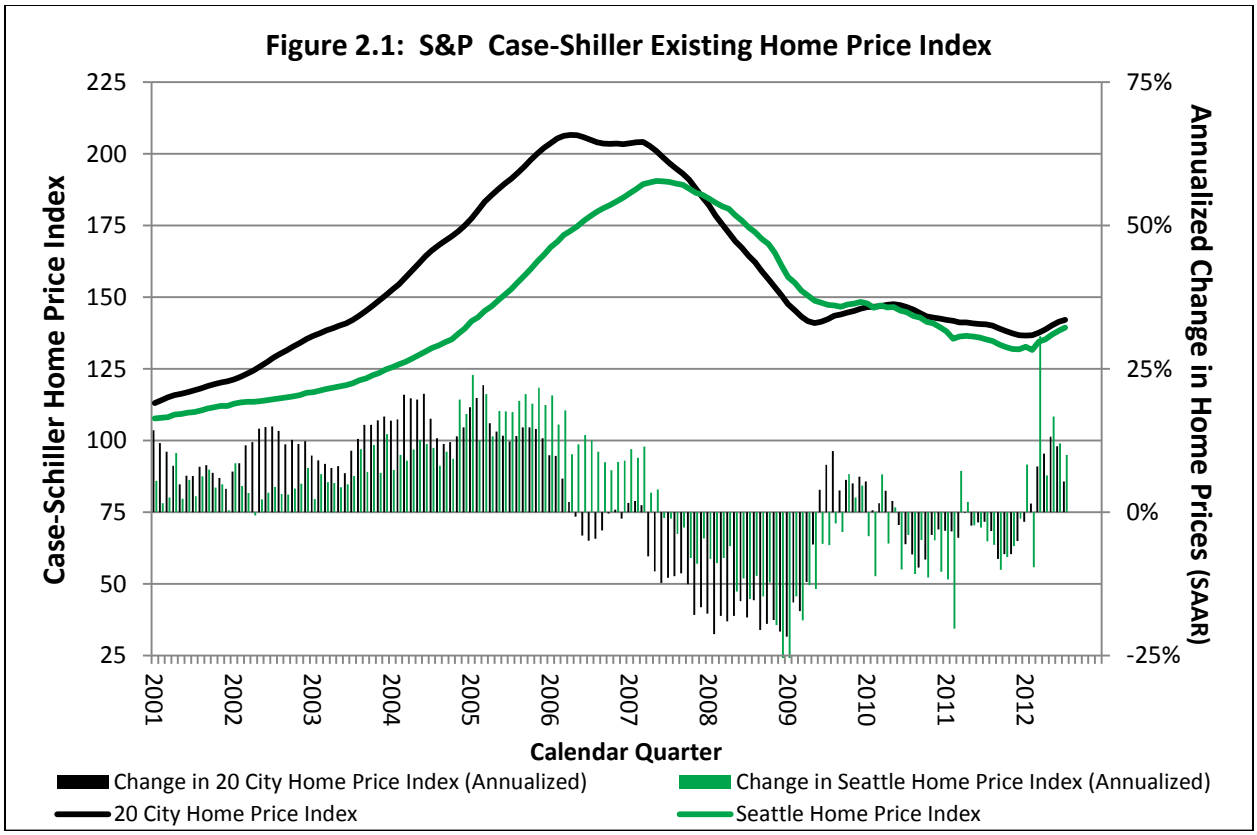
While the housing market is far from normal, the bottoming in home prices marks an important shift for the economy. Home-price appreciation will slowly start to support household balance sheets and improve confidence, creating a positive feedback loop with the credit market and broader economy. It is gradual and fragile, but we believe it has finally begun.

Michelle Meyer, Senior U.S. Economist
Bank of America Merrill Lynch Global Research
August 29, 2012
(via Calculated Risk)

Housing Prices. An upward trend in U.S. housing prices appears to be developing after six unprecedented years of falling and flat prices. The latest release of the S&P/Case-Shiller Home Price Indices, which track changes in the value of residential real estate both nationally as well as individually in 20 metropolitan regions, includes data through July 2012 which shows prices for existing home sales up for the third consecutive month for all 20 cities individually and for the 10-city and 20-city composites.[1]

Figure 2.1 charts the seasonally adjusted Case-Shiller indices for the 20-city composite, representing existing national home price trends, as well as the Seattle index. The national home price index has moved up each month in 2012 after bottoming out in January at its lowest point since January 2003, nine years earlier. In January 2012, the average existing house in the U.S.

[1] It would have been a fourth consecutive month of across-the-board price increases had prices not fallen in Detroit in April.



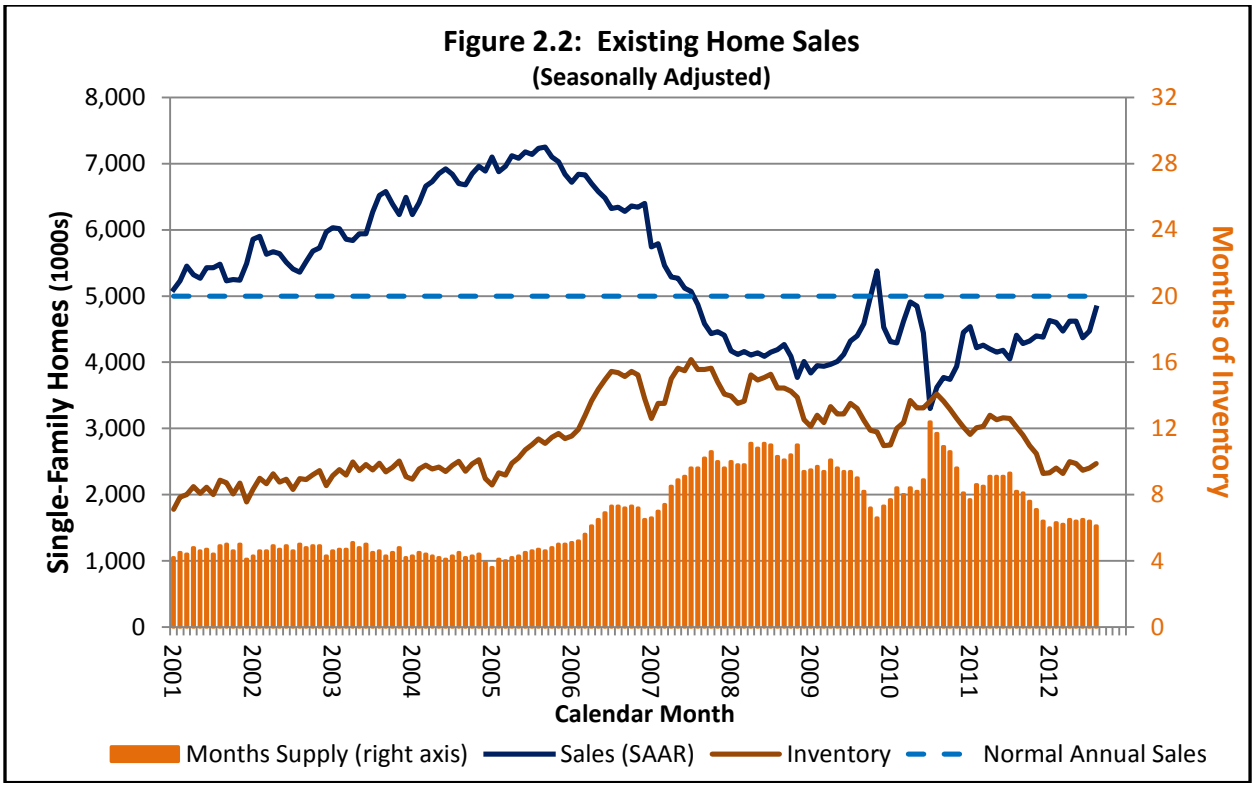
was worth only 66 percent of its value at the peak of the real estate bubble in April 2006.

Seattle house prices are similarly up in 2012, led by a striking surprising 31 percent jump in March (see **Figure 2.1**). Seattle prices bottomed out the previous month, February 2012, at their lowest point since June 2004. In February 2012, the average existing house in Seattle was worth only 69 percent of the May 2007 peak.

Even though most U.S. housing market experts think that this is the beginning of a recovery for U.S. housing prices, Robert Shiller, the co-creator of the home price indices and one who in 2005 prominently predicted the bursting of the real estate bubble, advises against hasty conclusions.

Existing Home Sales. Existing home sales moved up sharply in August to a seasonally adjusted annual rate of 4.82 million (see **Figure 2.2**), the highest number in five years (except for two peaks created in 2009 and 2010 by first time home buyers incentive programs). The data clearly show a continuing trend upward from the bottom on existing home sales. The August of nearly 5 million annualized sales is almost considered to be "normal" by housing experts.

There are several assessments of what the new "normal" sales rate will be. Given demographic and demand conditions, Lawrence Yun, Chief Economist for the National Association of Realtors, a "normal" rate of existing home sales could be in the range of 5 to 5.5 million if all conditions were optimal. He thinks that existing home sales may average five million in all of



2013, but it will require less stringent lending standards and stronger job creation to rise above that level. Based on historical turnover rates, Bill McBride of Calculated Risk estimates that "normal" sales are in the 4.5 to 5.0 million range. He points out that although existing home sales are close to that range now, truly normal conditions would have very few distressed sales. He says that no one should expect existing home sales to return to the housing bubble's 6 or 7 million per year, but instead the key to returning to "normal" is more conventional sales and fewer distressed sales.

One sign of an improving housing market is that the inventory of existing homes for sale has dropped back to a level not seen for almost seven years (see **Figure 2.2**). For the first eight months of 2012 through August, the inventory has flattened off at a level averaging 2.4 million homes. This compares with a peak of 4.0 million used homes in the inventory in July 2007.

Another encouraging trend is the sharp fall in months' worth of sales in the inventory of used homes on the market at current sales levels (see **Figure 2.2**), now down to a level averaging 6.3 months in the first eight months of 2012. This measure peaked at 12.4 months only two years ago in July 2010. In more normal times it is in the four to five month range.

New Home Sales. New home sales continue to be at historically low levels, but are starting to crawl out of the trough. Last year (2011) was the lowest year on record with only 308,000 new homes sold, compared with the long-term (1963-2010) "normal" annual rate of 678,000 per year. Looking closely at **Figure 2.3,** one can see that new home sales probably bottomed out in mid-2010 and they have been moving up since late 2011.

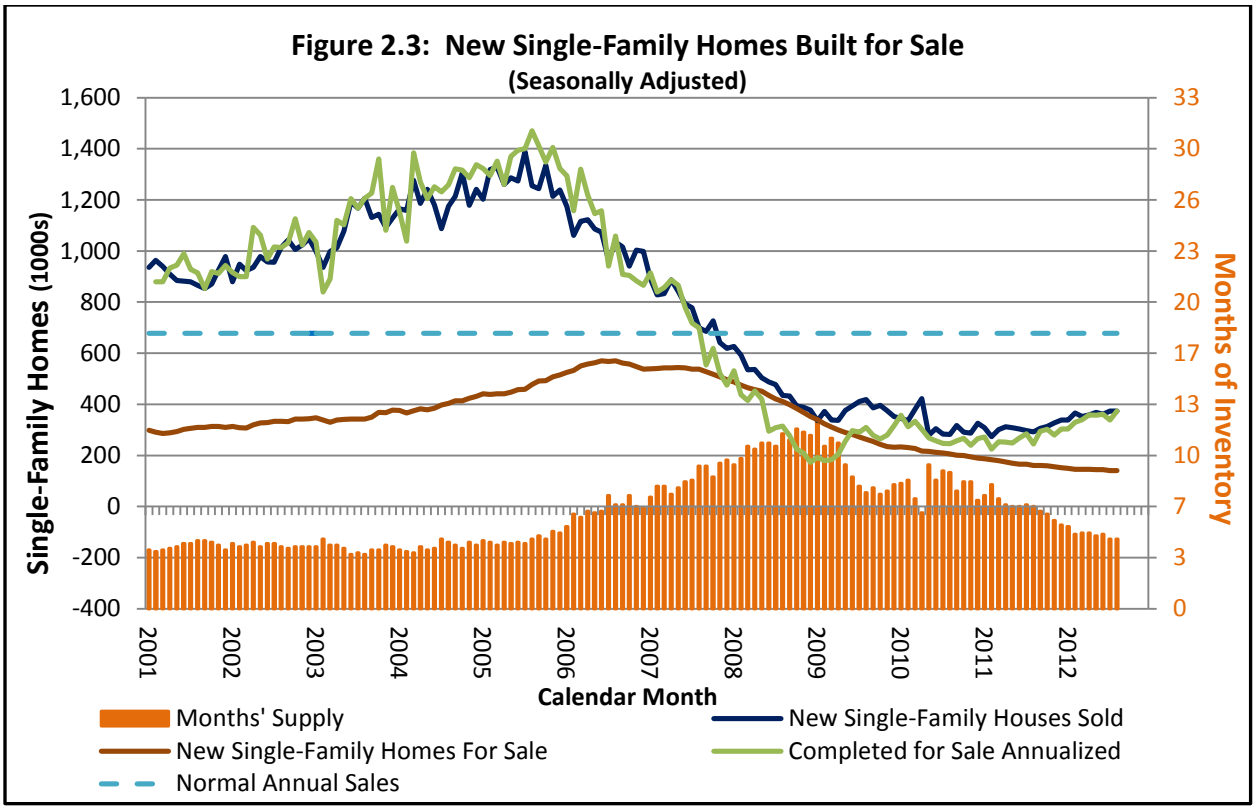
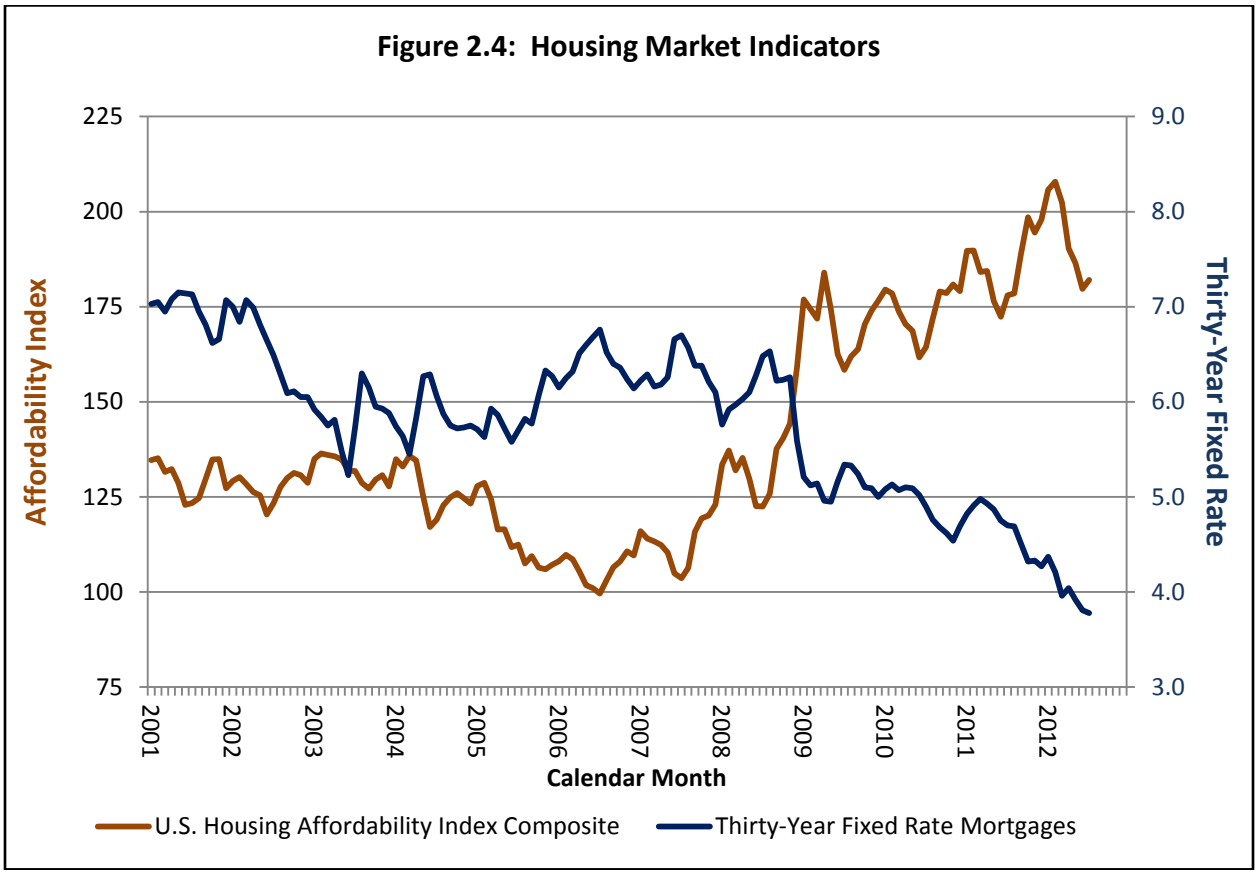


Figure 2.3 also shows that new home sales and new home construction move together. As low as new home sales (blue line on graph) have been, new house construction (green line) has been even lower since early 2007. Since the number of new homes sold has exceeded the number of new homes built for the last five years, the inventory of newly built homes for sale has declined over the same period. New home inventory is now down to its lowest level in six years. At a high in July 2006, there were 572,000 new single family homes available to purchase in the United States. At the end of July 2012, there were only 141,000 available, a new record low. The decline in the inventory of new homes is now slowing down and appears to be near its bottom: after five years, it appears that the number of completions is moving up to match the number of new home sales.

One sign of a strengthening housing market is that the total months' worth of inventory of new homes for sale may be bottoming. In August 2012, as shown in **Figure 2.3,** the months' worth of inventory of new homes for sale (at current sales rates) has decreased to 4.5 months from a monthly high of 12.2 months in January 2009. This measure is now approaching the pre-2006 average of about four months' worth of inventory of new homes. New home completions and sales will not increase significantly until the excess supply of existing homes, including those in the foreclosure pipeline, is absorbed. Reducing the inventory (supply) is a necessary part of restoring the U.S. housing market because it increases the need for new house construction.

Affordability. Housing affordability conditions for all buyers reached a milestone in the first quarter of 2012, according to the National Association of Realtors (NAR). NAR's composite Housing Affordability Index rose to a record high of 205.4 in Q1 2012 (see **Figure 2.4**), based

on the relationship between the median home price, the median family income, and the average mortgage interest rate. The higher the index is, the greater the household purchasing power.



The Affordability Index is the ratio of median family income to the income required to qualify for the median-priced existing single-family home. In July 2012, the affordability index was $61,080/$33,552 or 182.0.

The index this year broke the 200 mark for the first time since recordkeeping began in 1970. Since then, the affordability index has fallen sharply and stands at 182.0 in July (see **Figure 2.4**), driven by a 19 percent increase in the median priced existing single family home (this may be due to the mix of homes sold having relatively more higher price homes, driving up the value of the median priced home sold).

U.S. 30-year fixed mortgage loan rates[2] remain at historically low levels (see **Figure 2.4**), dropping to yet another new low of 3.78 percent in July. The 30-year fixed mortgage rate has been below 5 percent for 25 consecutive months.

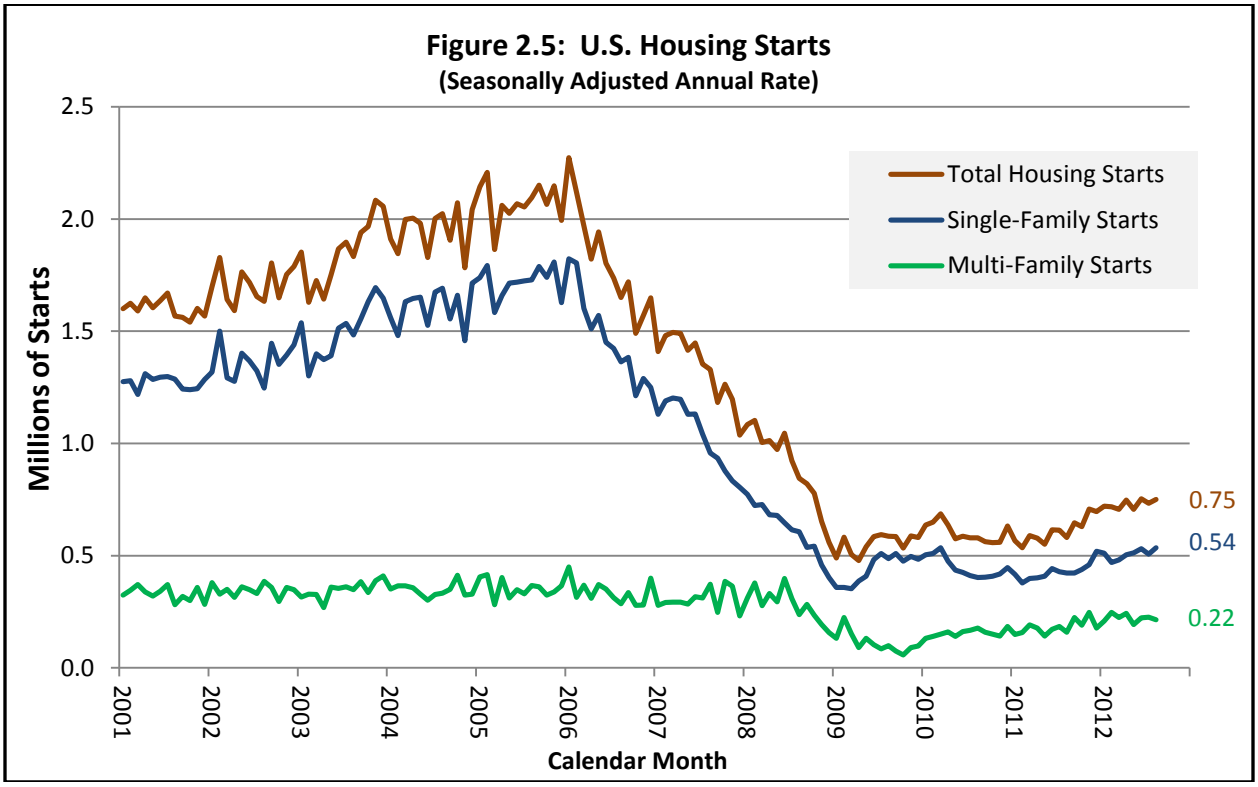
The family income required to qualify for a mortgage on the $188,100 median-priced existing single family home in the United States at July's rate of 3.78 percent remains relatively low at only $33,552 per year. This compares with an average qualifying income of $45,984 in 2008 and $52,992 in 2007 to purchase the median priced existing single family home in those years.

[2] The data series cited here is the national average effective rate on closed fixed-rate 30-year conventional home mortgage loans by all major lenders as reported by the Federal Housing Finance Agency.

While the qualifying income is now much lower, median family income was $61,080 in July, similar to the average of $63,366 in 2008 and $61,173 in 2007.

Some commentators question why very affordable housing has not had a larger impact on housing demand and home sales to date. The reason rests on a shortfall of demand: a large number of potential home buyers remain on the sidelines because they have been injured financially by the Great Recession. Millions of homeowners remain underwater on their mortgages. Millions of others have been unemployed for long periods and many of those fortunate to find jobs are now working for lower pay. Young adults, who normally are an important demand driver for home sales, are having an especially hard time in the job market and their large college loan obligations discourage first-time home buying. In addition, banks have tightened mortgage loan requirements (such as requiring high down payments and excellent credit ratings).

Housing Starts. Despite its continued problems, the U.S. housing market appears to be recovering. Housing starts accelerated in the United States in 2012, after moving more or less sideways at a historic low level for the last three years (see **Figure 2.5**). In April 2009, they fell to 478,000 (seasonally adjusted annual rate), the all-time record low month since the Census Bureau began tracking housing starts in 1959. In the last five months (April-August 2012), new housing starts have averaged 738,000 (SAAR), a level not seen since late 2008 (see brown line on **Figure 2.5**). The improvement was broad-based with increases in all four U.S. Census regions.



In the 2009-2011 housing market trough, single family starts (blue line) averaged 440,000 (SAAR). The annualized rate of single family starts is up to 507,000 for the first eight months of 2012. These upward trends are apparent in **Figure 2.5**. Multifamily starts (green line) are now up to 223,000 on an annualized basis, compared with the three year average of 149,000 in the 2009-2011 trough.

Home builder confidence in the market for newly built single-family homes, which like housing starts had been moving sideways at a depressed level for several years, continues to rise in 2012. In September, the National Association of Home Builders/Wells Fargo Housing Market Index (HMI) rose for a fifth consecutive month to 40, its highest reading since June 2006. The HMI averaged 15-16 for years 2008-2011. Any number under 50 indicates that more home builders view sales conditions as poor rather than good. Even though it is still under 50, its increase is a sign that the market is improving.

The level of negative equity continues to improve with more than 1.3 million households regaining a positive equity position since the beginning of the year. Surging home prices this spring and summer, lower levels of inventory, and declining REO sale shares are all contributing to the nascent housing recovery and declining negative equity. As of Q2 2012, there were 1.8 million borrowers who were only 5 percent underwater. If home prices continue increasing over the next year, these borrowers could move out of a negative equity position.

Mark Fleming, Chief Economist, CoreLogic
September 12, 2012

Housing Shadow Inventory. The inventories of existing and new homes discussed above are made up of those housing units which are currently listed for sale ("on the market"). While it exists even in normal times, the "shadow inventory"—housing units not currently on the market, but expected to be listed in the next few years—has gained attention as one of the most important measures of the health of the housing market.

Definitions vary, but the shadow inventory may include:

- Bank-owned properties (REO, or "real estate owned")
- Properties in the process of foreclosure
- Properties with seriously delinquent mortgages of over 90+ days
- Properties with less seriously delinquent mortgages which will become seriously delinquent
- Condos that were converted to apartments and that are expected to be converted back in the next few years
- Investor owned rental properties
- Homes that owners want to sell but are waiting for a better market

CoreLogic tracks the shadow inventory, as defined by the first three groups listed above: it declined from its peak of 2.1 million housing units in January 2010 to 1.8 million units in April 2011 and further down to 1.5 million units in April 2012.

A large shadow inventory leads to a large number of distressed sales (including short sales), and therefore pushes home prices down. The decline in the excess shadow inventory removes some of the downward pressure on house prices.

An August 22, 2012 Los Angeles Times article quotes U.S. Secretary of Housing and Urban Development Shaun Donovan as saying that the volume of distressed and lender-owned homes was decreasing at Fannie Mae, Freddie Mac, the Federal Housing Administration, and in bank portfolios. Donovan said the worst appears to be over and that he is surprised at all the attention the shadow inventory has gotten.

Lumber, log, and timber stumpage prices

Lumber Production and Capacity Utilization. In 2005, when lumber prices were cyclically high, lumber mills in the U.S. Coast timber region, defined as western Washington and western Oregon[3], produced 11.6 billion board feet (bbf) of softwood lumber while operating at a historically strong 93 percent of plant capacity. By 2009, lumber production in the Coast region had fallen to 6.5 bbf, using only 57 percent of mill capacity, which itself had been reduced by nine percent. By 2012, lumber production in the Coast region had recovered somewhat to 8.1 bbf. With capacity virtually unchanged, capacity utilization was up to 72 percent.

RISI is projecting that lumber production in the Coast region will increase to 9.4, 10.4, and 11.0 mmbf, respectively, in 2013, 2014, and 2015. Meanwhile, RISI is projecting that plant capacity will be little changed through the period, resulting in an increase of capacity use to 83, 93, and 97 percent, respectively, for 2013, 2014, and 2015. Lumber prices are expected to increase as the demand/mill capacity ratio for Coast lumber mills rises above 80 percent.

Timber and Lumber Consumption by End Use. Most of the timber harvested in the U.S. Coast region is milled into lumber, but that share declined during the Great Recession as timber harvests declined (see **Figure 2.6a**). In 2005-2007, about 75 percent of Coast region timber harvest was converted into lumber, about ten percent was exported as logs, and about 15 percent went to other uses, mostly plywood but also LVL and pulp. When timber harvest levels bottomed out in 2009, only 64 percent went into lumber while 16 percent went to log exports and 20 percent to other uses. Even though the volume of Coast region logs going to lumber mills has increased off the 2009 bottom, the share of the total harvest declined further to 56 percent in 2011 as log exports to China shot up and exports accounted for 24 percent of the total harvest. RISI predicts that the shares of Coast timber harvest for 2013-2016 by end use will be 67 percent for lumber, 19 percent for log exports, and 14 percent for other, reflecting a relative shift to exports from lumber when compared with the 2005-2007 period.

Just as with timber, the recession has also had an impact on the end use of lumber. Over a historical baseline period from 1981 to 2000, 38 percent of lumber consumed went into residential construction, including single-family homes, multi-family units, and mobile homes (see **Figure 2.6b**). As annual lumber consumption increased by 26 percent during the housing bubble, the share of lumber used in residential construction increased to 44 percent. The share of lumber going to residential use fell to 24 percent in the housing slump, as represented by 2011 data. RISI expects the end use of lumber to revert to the historical distribution after 2016.

[3]Most all of the timber sold by DNR in western Washington goes to lumber mills located in western Washington and western Oregon. Over the period FY 2005-2011, about 87 percent of the volume timber sold by DNR was located in western Washington, with the percentage by value being even higher. With the recent reduction in DNR's Southeast Region timber sales program, the share of DNR timber sales in the western part of the state is expected to rise to about 91 percent over the next several years.

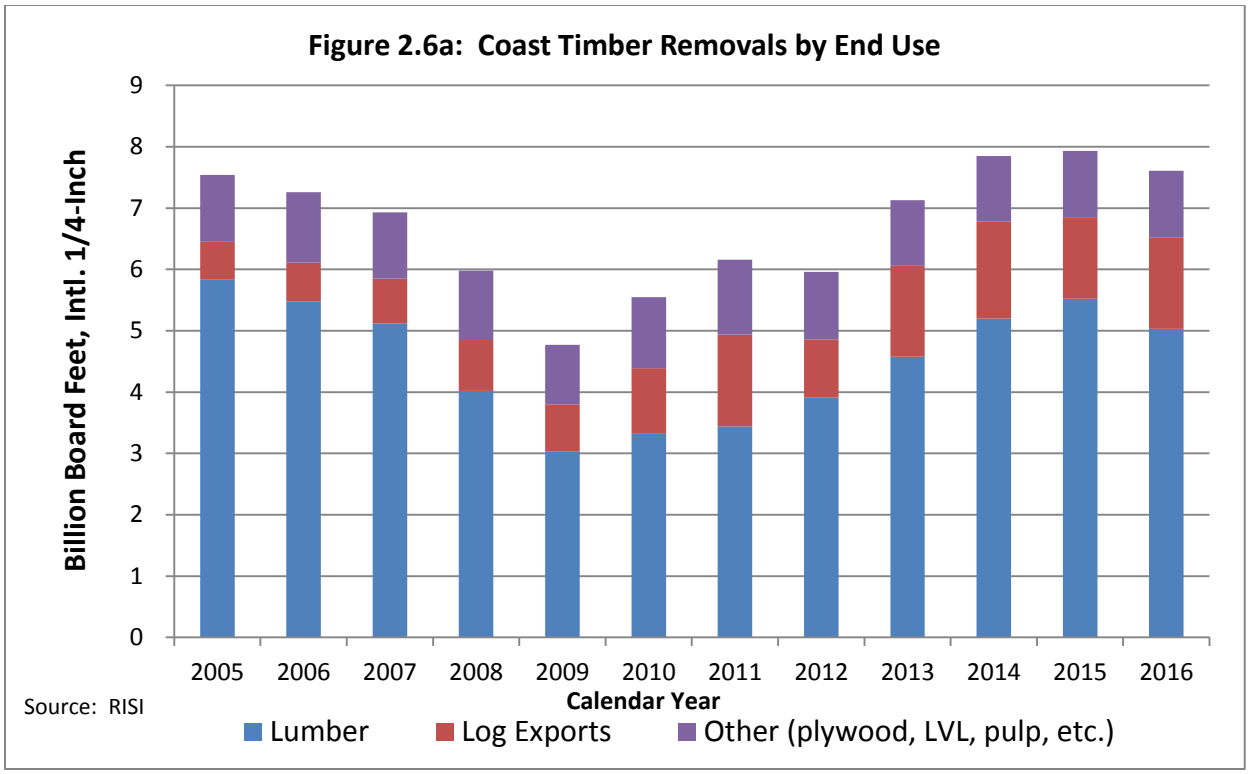


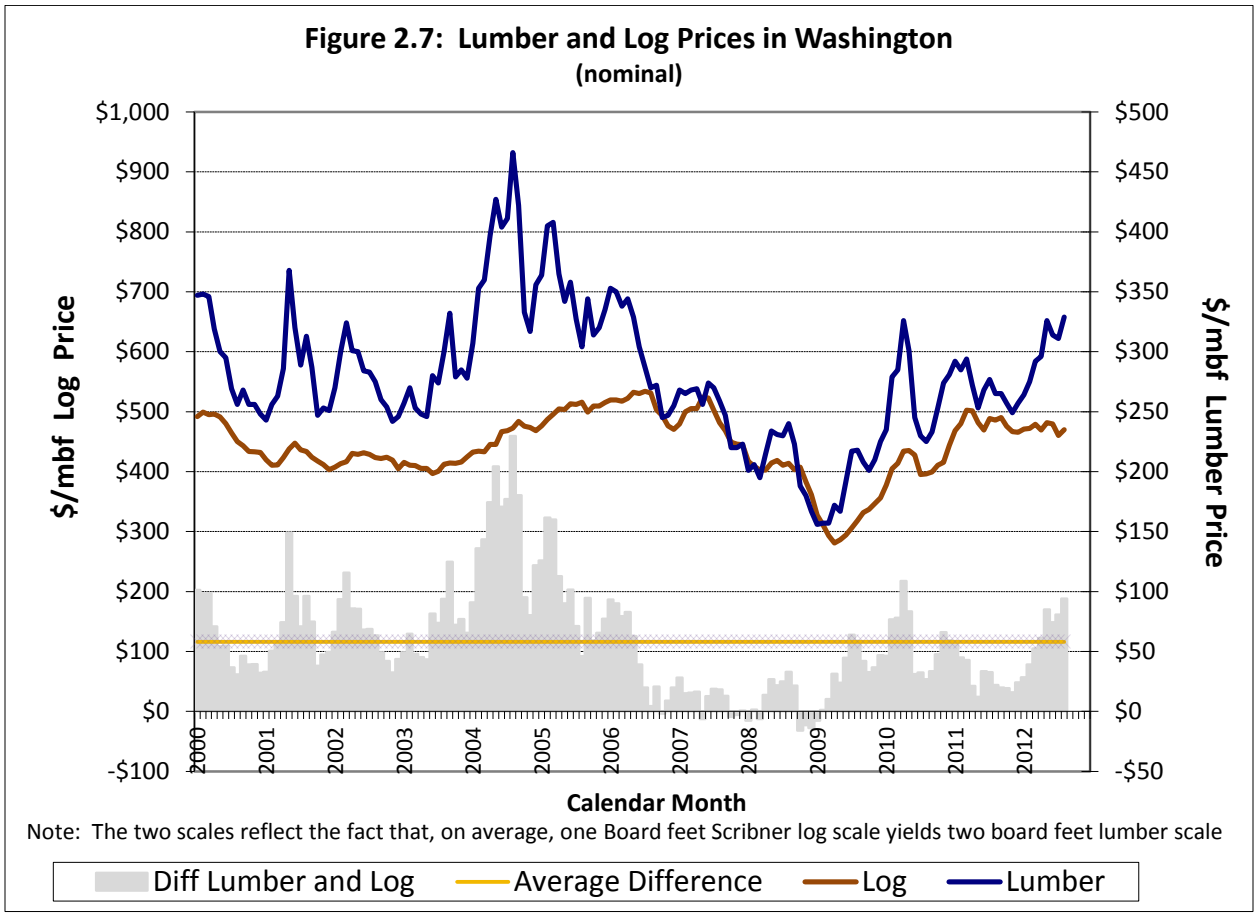
Figure 2.6b: U.S. Domestic Softwood Lumber Demand by End Use

	Historical Baseline	Housing Bubble	Housing Trough	RISI Future Forecast
	1981-2000	2001-2005	2011	2016-2027
Shares (%):				
Residential	38	44	24	40
Non-residential	6	4	4	6
Residential Improvements	30	30	35	28
Industrial	25	22	36	26
Annual U.S. Consumption (bbf)	46.1	58.2	33.4	50.2

Lumber and Log Prices. **Figure 2.7** shows nominal monthly lumber and log prices in Washington and their trends and relationship since 2000. Log prices are the prices paid for logs delivered to the mill.

Both lumber and log prices have significantly improved from their extreme lows in 2009. The lumber price bottomed at $156/mbf in January 2009, in the depth of the Great Recession (see **Figure 2.7**). It rose to hit a high of $326/mbf in April 2010 before falling steeply

to $225/mbf in August 2010. In the last two years, the local lumber price has been generally rising and it is up to a cyclical high of $329/mbf in August 2012.

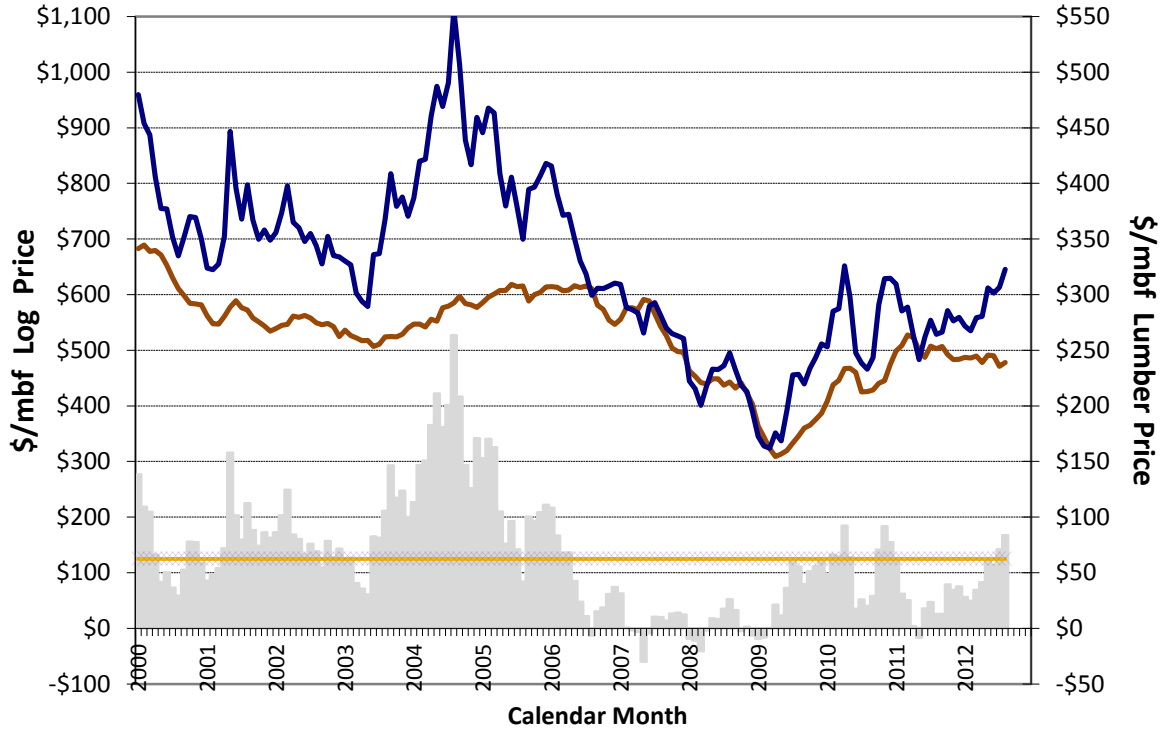


Composite log prices are less volatile than lumber prices (see **Figure 2.7**). They hit their post-2000 low of $281/mbf in April 2009. Log prices rose to $503/mbf in March 2011 and drifted down slightly since then, most recently to $470/mbf in August 2012. Note the diverging trend between lumber and log prices since late 2011. This is a good sign for lumber mills in the Pacific Northwest, since it suggests that their profit margins are increasing.

Figure 2.8 presents the data from **Figure 2.7** but in real (July 2012 dollar basis), seasonally adjusted terms. The differences may be subtle, but the inflation adjustment in **Figure 2.8** highlights that both lumber and log prices are currently lower relative to earlier prices, illustrated for example by comparing current prices in the two figures with prices in mid-2004.

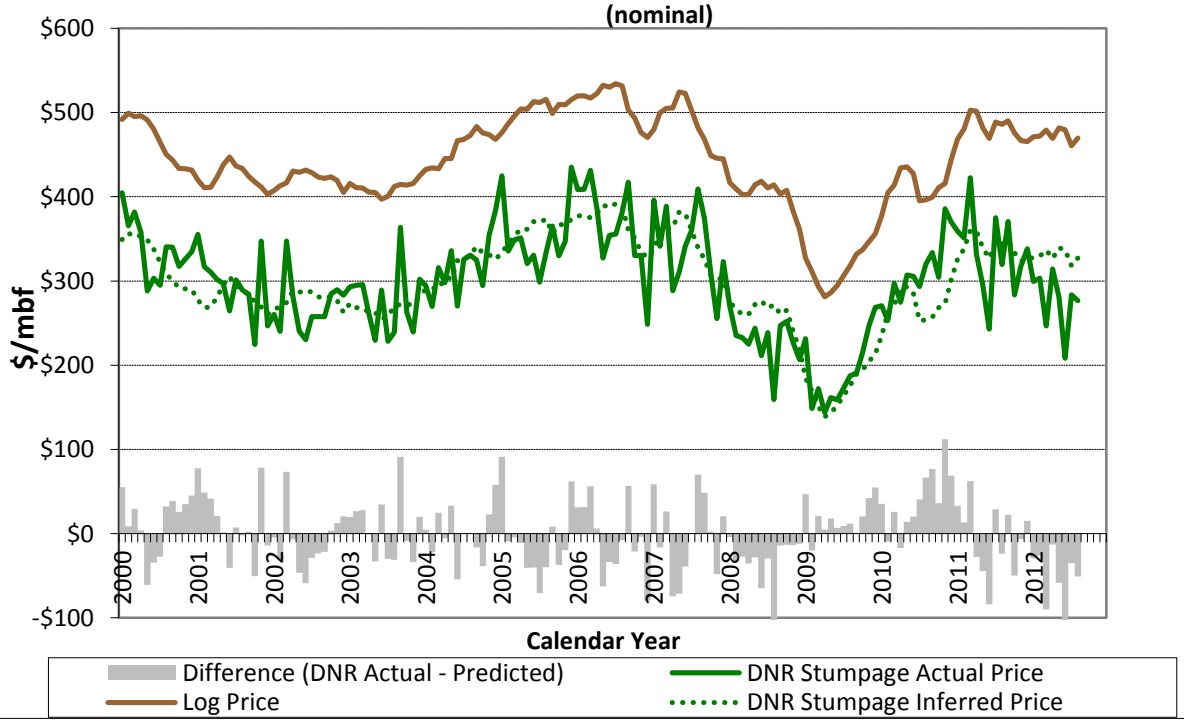
Log and Stumpage Prices. **Figure 2.9** shows monthly nominal prices for logs and actual DNR stumpage since 2000. The "composite log price" represents prices for logs delivered to mills weighted by the average geographic location, species, and grade composition of timber typically sold by DNR. The brown line showing the composite log price is the same as on **Figure 2.7**.

Figure 2.8: Lumber and Log Prices in Washington
Real (2012 $s) Seasonally Adjusted



Note: The two scales reflect the fact that, on average, one Board feet Scribner log scale yields two board feet lumber scale

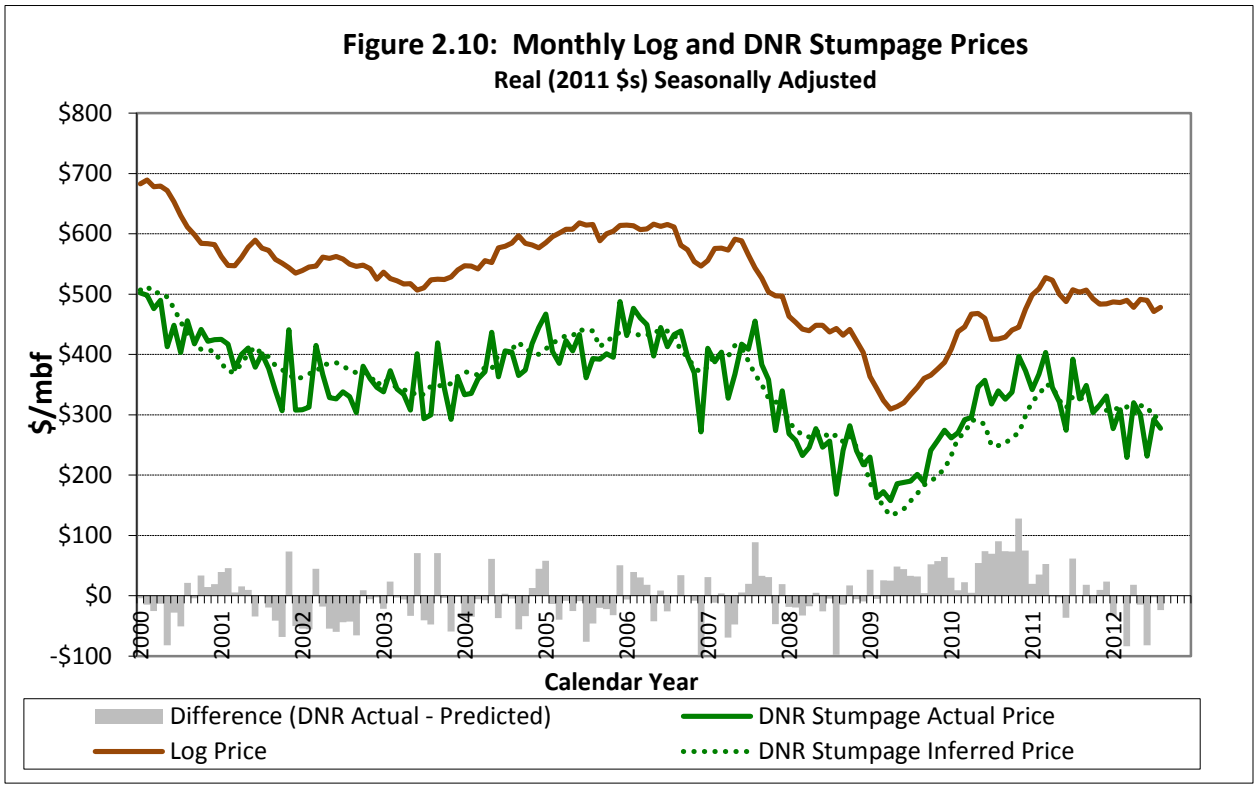
Figure 2.9: Monthly Log and DNR Stumpage Prices
(nominal)



Lumber prices and DNR stumpage prices are more volatile than log prices. Both prices hit a low in early 2009 in the midst of the recession, declining to $144/mbf in April. Both prices also improved through the two-year period from spring 2009 to spring 2011. Stumpage prices climbed steeply during the same two-year period and reached $422/mbf in April 2011. Although log prices have drifted down only slightly since then, stumpage prices have fallen more steeply (with the typical month-to-month choppiness).

The last timber sales auction result was $277/mbf in August 2012, but prices fell as low as $208/mbf in June 2012, weighed down by a large thinning sale in the Olympic Experimental Forest and by four large volume sales in the northeastern part of the state. In 2012 through August, log prices at $472/mbf are slightly down from $481 for all of 2011; stumpage prices (weighted by volume) for calendar 2012 through August averaged $273/mbf, down more sharply from 2011's $338/mbf (see **Figure 2.9**). As shown by the green dotted line, stumpage prices from actual DNR timber sales in 2012 are generally lower than stumpage prices inferred from log prices.

Figure 2.10 is the same as **Figure 2.9** except that it shows real (July 2012 dollar basis) seasonally adjusted prices rather than nominal prices. The seasonal adjustment (accounting for typical monthly price patterns) dampens some of the month-to-month variability in the raw stumpage price data.



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Part 3. DNR's Revenue Forecast

This Revenue Forecast includes Department revenues from timber sales on trust uplands, leases on trust uplands, and leases on aquatic lands. It also forecasts revenues to individual funds, including DNR management funds, beneficiary current funds, and beneficiary permanent funds. Some caveats about the uncertainty of forecasting Department revenues are summarized near the end of this section.

Timber revenues

The Washington State Department of Natural Resources (DNR) sells timber through contracts. The Department determines the total volume to be offered for sale each month and the minimum bid for each timber sale. The sale is awarded to the highest bidder and the average sales price ($/mbf) is set by the result of the auction. DNR collects a 10 percent initial deposit at the time of sale and holds it until the sale is completed. Revenues are collected at the time of harvest (removal). The initial deposit is credited as the last 10 percent of timber is harvested.

Contracts for DNR timber sales sold in FY 2012 varied in duration from three months to three years, with an average (weighted by volume) of about 21.5 months. The purchaser determines the actual timing of harvest within the terms of the contract. As a result, timber revenues to beneficiaries and DNR management funds lag current market conditions: the lag is currently about 13 months.

Timber that is sold but not yet harvested is referred to as "volume under contract" or "inventory." Timber volume is added to the inventory when it is sold and placed under contract, and it is removed from the inventory as the timber is harvested.

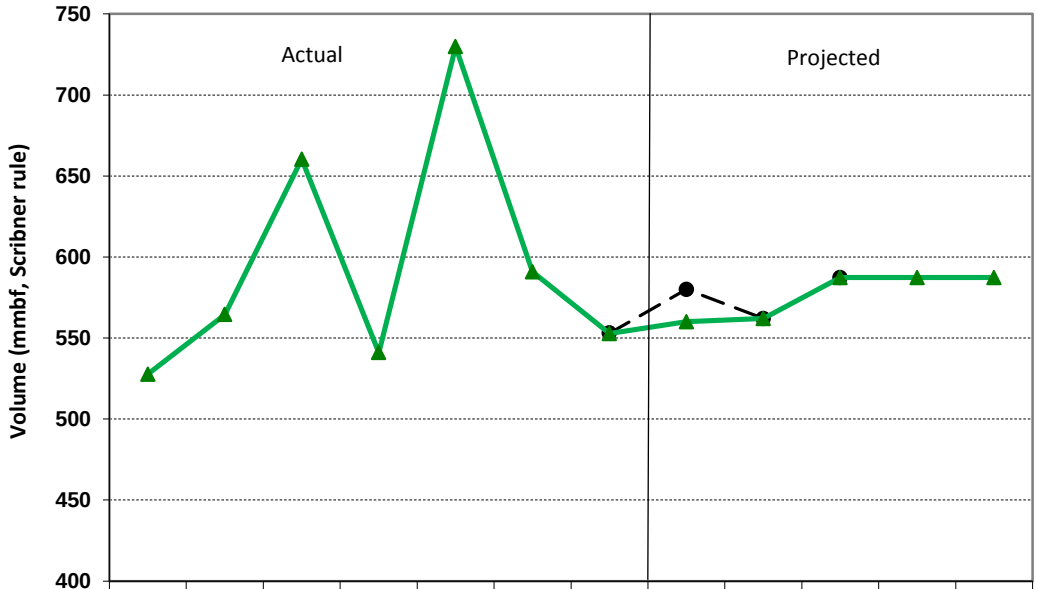
Timber Sales Volume. DNR sold 37 mmbf in FY 2013's first two months of timber sales. Projected timber sales volume for the fiscal year is revised downward to 560 mmbf from 580 mmbf to account for increased complexity in preparing timber harvest units for sale (see **Figure 3.1)**. The forecast for FY 2014 is unchanged at 562 mmbf.

FY 2015 is the first year of the next sustainable harvest decade (FY 2015 through FY 2024) for western Washington. Until the next decade's level is determined, the Forecast will use the Department's estimated annual Westside sustainable harvest level of 537 mmbf. Combined with

projected eastern Washington timber sales of 50 mmbf for the next several years, we arrive at a projected annual timber sales volume of 587 mmbf for FYs 2015-2017.

If actual timber sales results follow these projections, the shortfall on this decade's 5,500 mmbf target for western Washington would be about 295 mmbf (20 mmbf higher than in the June Forecast). However, there is a risk of falling short of the revised projected timber sales volumes due to prospective environmental and policy issues.

Figure 3.1: Forecast Timber Sales Volume



	FY 06	07	08	09	10	11	12	13	14	15	16	17
Previous Forecast							553	580	562	587		
Current Forecast	528	565	660	541	730	591	553	560	562	587	587	587
Change							0	-20	0	0		
Percent Change							0%	-3%	0%	0%		

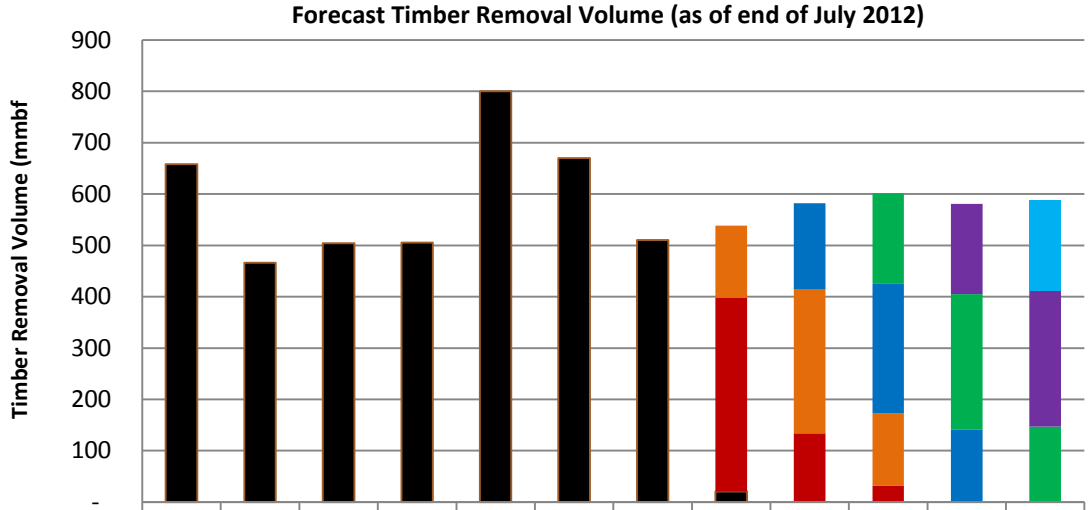
Timber Removal Volume. At the end of July, the Department had 544 mmbf of timber under sales contract valued at $154.6 million under sales contract.

For each Forecast, we survey DNR timber sale purchasers to determine their planned timing of removals of the timber volume they have under contract at the time of the survey. This Forecast's survey, conducted in the first half of August, indicates that purchasers plan to harvest 378 mmbf, or 69 percent, of the volume remaining under contract this fiscal year (FY 2013) and 134 mmbf (25 percent) and 32 mmbf (6 percent) of the existing inventory in FYs 2014 and 2015, respectively (see **Figure 3.2** for detail).

As indicated by the purchasers' survey, the forecast of total timber removals for FY 2013 is 538 mmbf: 20 mmbf that timber sale purchasers removed in July, expected removals of 378 mmbf from volume under contract at the end of July, and 140 mmbf in FY 2013 sales volume to be

removed this year (see **Figures 3.2 and 3.3**). This is a 23 mmbf, or 4.1 percent, decrease from the 561 mmbf projected in the June Forecast.

Figure 3.2: September 2012 Revenue Forecast
Forecast Timber Removal Volume (as of end of July 2012)



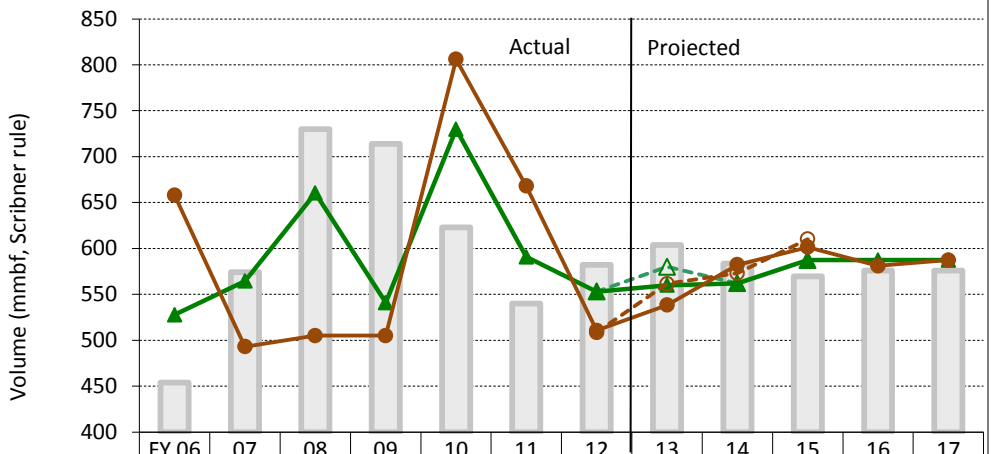
	FY 06	07	08	09	10	11	12	13	14	15	16	17
Total	658	466	504	506	801	670	511	538	582	601	581	587
Sales in FY 17												176
Sales in FY 16											176	264
Sales in FY 15										176	264	147
Sales in FY 14									169	253	141	-
Sales in FY 13								140	280	140	-	
Sales Under Contract								378	134	32		
Actual Removals to Date	658	466	504	506	801	670	511	20				

The level and timing of projected timber removal volumes are changed in this Forecast as a result of the projected sales volumes being reduced in combination with the purchasers' plans to delay some of their harvests. This may be due to the supply of non-state logs available to them at the current time. As a result, projected timber removal volumes for the current biennium, 2011-2013, are reduced by 21 mmbf, or two percent, from the June Forecast. Projected volumes across the 2013-2015 Biennium are unchanged (see **Figure 3.3**).

Timber Sales Prices. Composite log prices (weighted by species) may be used to infer actual stumpage prices for DNR timber sales (using the formula composite log price minus $150/mbf for logging costs). The composite projected stumpage price reached a recent high of $353/mbf in March 2011, the highest level since June 2007 (see **Figure 3.4**). Since then, it has generally fallen and stands at $320/mbf as of August.

Actual results of monthly DNR timber sales (shown in **Figure 2.10** in seasonally adjusted terms and in real 2012 dollars) are more volatile. In FY 2011, monthly timber sale prices were mostly above $300/mbf (see **Figure 2.9)** and averaged $339/mbf weighted by volume, whereas they averaged $296/mbf in FY 2012 (see **Figure 3.5**).

Figure 3.3: Timber Volume - Sales, Removals, and Inventory



	FY 06	07	08	09	10	11	12	13	14	15	16	17
Inventory	454	574	730	714	623	540	582	604	583	569	576	576
Sales - Previous Forecast							553	580	562	587		
Sales - Current Forecast	528	565	660	541	730	591	553	560	562	587	587	587
Change							0	-20	0	0		
Removals Prev. Forecast							509	561	573	610		
Removals - Current Forecast	658	493	505	505	806	668	511	538	582	601	581	587
Change							2	-23	9	-9		
Percent Change							0%	-4%	2%	-1%		

As discussed in **Part 2**, the U.S. housing market is showing signs of improvement and is likely to continue to strengthen over the forecast period. The timing and magnitude of the recovery in housing construction remain uncertain, but if domestic demand for lumber strengthens, it will exert upward pressure on stumpage prices. With this and predicted timber mix in mind, the FY 2013 average sales price is raised from $274/mbf to $280/mbf in this Forecast (see **Figure 3.5)**. Sale price estimates in FYs 2014 and 2015 are raised by five percent to $315/mbf and by 12 percent to $335/mbf, respectively. We predict that prices in FYs 2016 and 2017 will drop off slightly as mill production adjusts to the increased lumber quantities demanded by the growing housing market.

Figure 3.4: DNR Composite Log Prices And Predicted Stumpage Prices

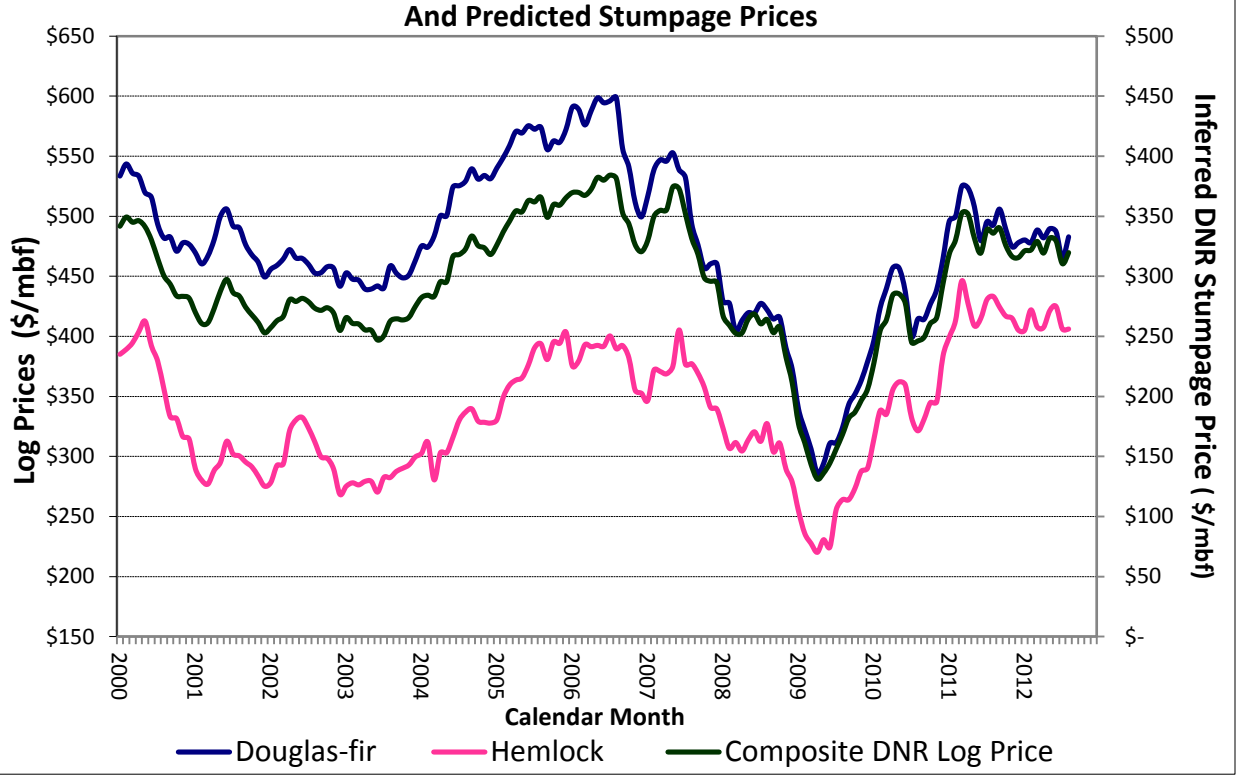
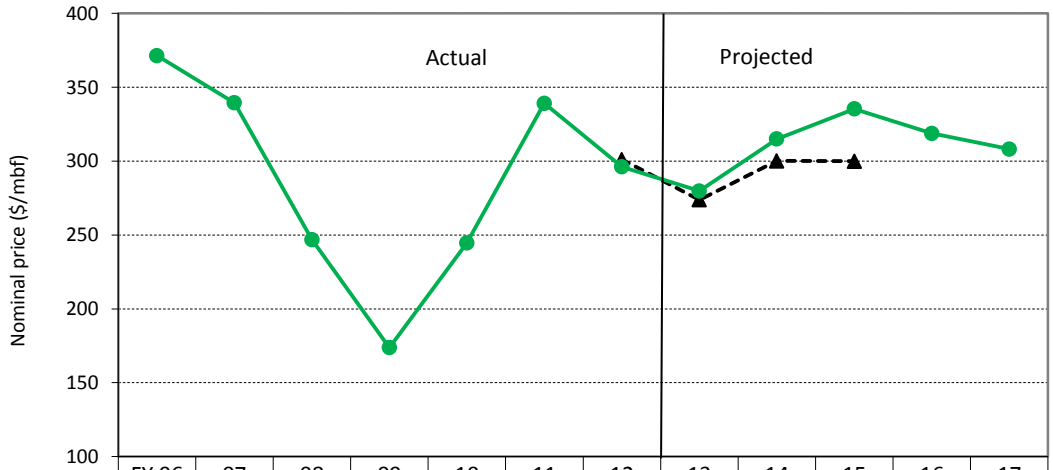


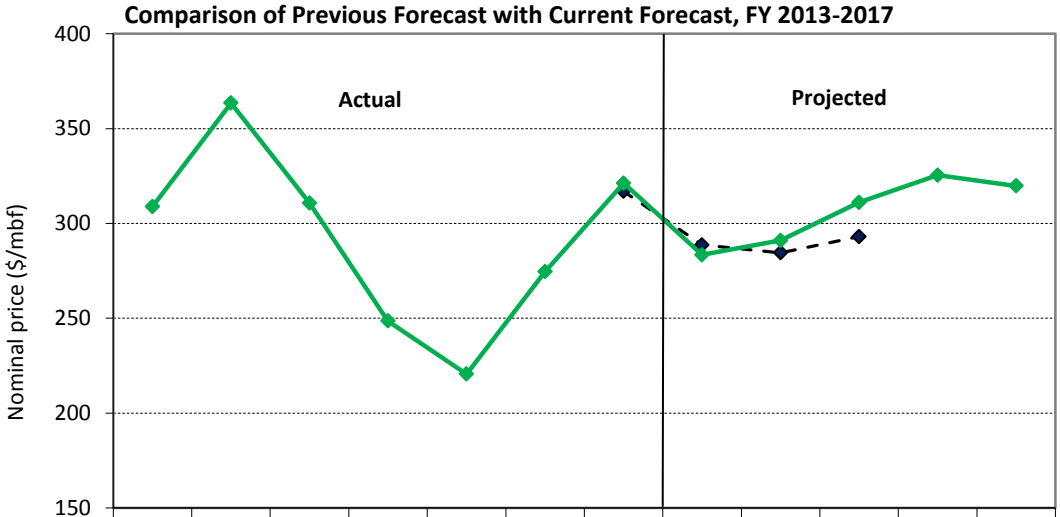
Figure 3.5: Timber Sales Prices
Comparison of Previous Forecast with Current Forecast, FY 2013-2017



	FY 06	07	08	09	10	11	12	13	14	15	16	17
Previous Forecast							301	274	300	300		
Current Updated	371	340	247	174	245	339	296	280	315	335	319	308
Change							-5	6	15	35		
Percent Change							-2%	2%	5%	12%		

Timber Removal Prices. Timber removal prices are determined by the sales prices and timing of the harvests. They can be thought of as a moving average of previous timber sales prices, weighted by the volume of sold timber removed in each time period. The removal volumes used to calculate the weights are shown in **Figure 3.2**. There is a smoothing out and a lag of timber removal prices compared to timber sales prices. For example, sales prices bottomed at an average annual price of $174/mbf in FY 2009 (see **Figure 3.5**). As shown in **Figure 3.6**, removal prices bottomed out in FY 2010 at $221/mbf on an annual basis, which was $47/mbf higher and came a year after the bottom for annual sales prices. Timber removal prices made a rebound in FY 2011 to an average annual price of $275/mbf, thanks in part to the year-over-year increase in sales prices in FYs 2010 and 2011. FY 2012's average removal price was $321/mbf. The future removal price is expected to increase in each year through FY 2016, starting at $283/mbf in FY 2013.

Figure 3.6: Timber Removal Prices
Comparison of Previous Forecast with Current Forecast, FY 2013-2017



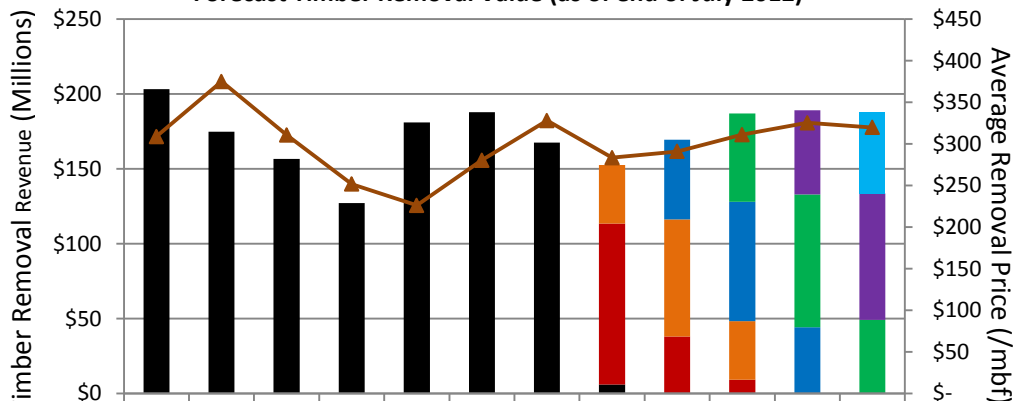
	FY 06	07	08	09	10	11	12	13	14	15	16	17
Previous Forecast							317	289	284	293		
Current Updated	309	363	311	249	221	275	321	283	291	311	325	320
Change							4	-5	6	18		
Percent Change							1%	-2%	2%	6%		

Timber Removal Revenues. **Figure 3.7** shows projected annual timber removal revenues and the average removal price for each fiscal year, broken down by the fiscal year in which the timber was sold ("sales under contract" are already sold as of August 1, 2012). About four percent (or $6 million) of the projected timber harvest revenue this fiscal year (FY 2013) has already been harvested, 70 percent ($107 million) will come from previously sold timber sales currently under contract as of the end of July, and the remaining 26 percent ($39 million) of revenue will come from removals of timber sold this year.

In the current 2011-2013 Biennium, projected timber revenues are revised downward from $323.3 million to $320.1, a reduction of $3.2 million, or two percent, from the June Forecast (see **Figure 3.8**). In the 2013-15 Biennium, forecast timber removal revenues are projected to be up

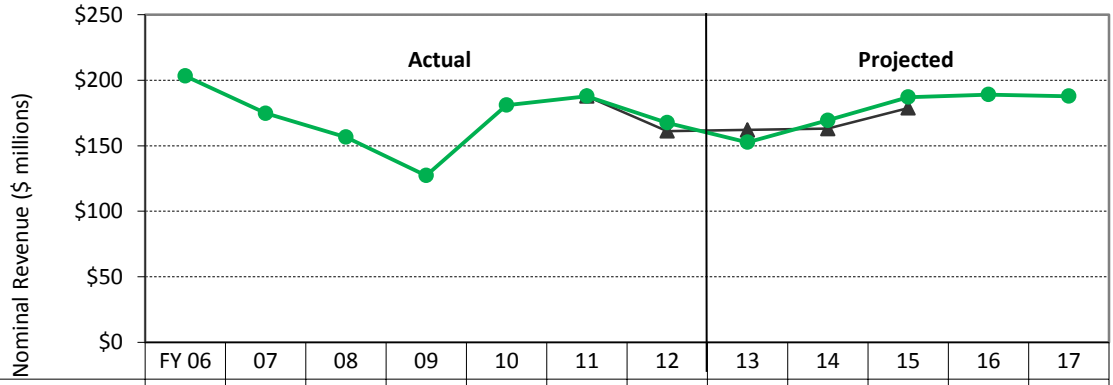
four percent, from $341.8 million to $356.5 million. Revenues for the 2015-2017 Biennium are predicted to be $376.8 million.

Figure 3.7: September 2012 Revenue Forecast
Forecast Timber Removal Value (as of end of July 2012)



	FY 06	07	08	09	10	11	12	13	14	15	16	17
Total	$203	$175	$157	$127	$181	$188	$168	$153	$169	$187	$189	$188
Sales in FY 17												$54
Sales in FY 16											$56	$84
Sales in FY 15										$59	$89	$49
Sales in FY 14									$53	$80	$44	-
Sales in FY 13								$39	$78	$39	-	
Sales Under Contract								$107	$38	$9		
Actual Removals to Date	$203	$175	$157	$127	$181	$188	$168	$6				
$/mbf	$309	$375	$311	$252	$226	$280	$328	$283	$291	$311	$325	$320

Figure 3.8: Timber Removal Revenues
Comparison of Previous Forecast with Current Forecast, 2013-2017



	FY 06	07	08	09	10	11	12	13	14	15	16	17
Previous Forecast						187.8	161.2	162.1	163.0	178.8		
Current Updated	203.2	174.7	156.6	127.2	181.0	187.8	167.5	152.6	169.4	187.1	189.1	187.8
Change							6.3	-9.5	6.4	8.3		
Percent Change							4%	-6%	4%	5%		

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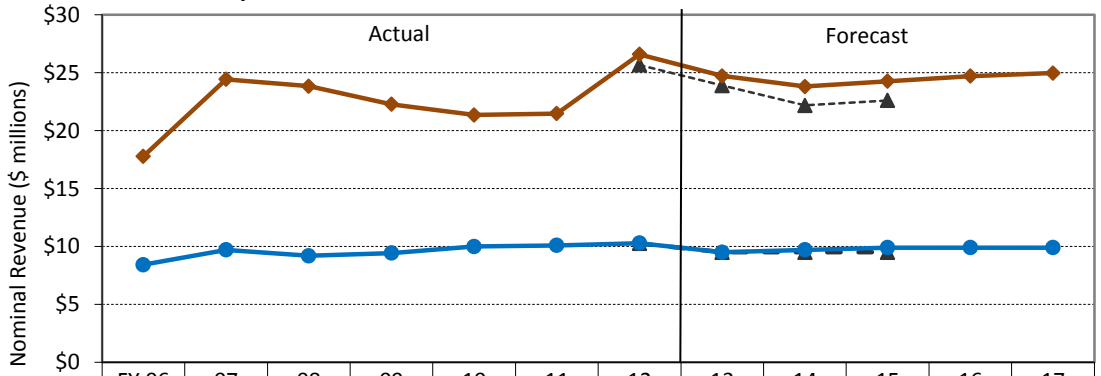
Upland lease revenues

Upland lease revenues are generated primarily from leases and the sale of valuable materials, other than timber, on state trust lands. In the Forecast, upland lease revenues are divided into two categories:

> **Commercial—**Commercial real estate leases.
> **Agricultural and Other**—Agricultural includes dryland cropland, irrigated cropland, and orchard and vineyard leases. "Other" includes grazing, special forest products, special use, communication site, and mineral and hydrocarbon leases, right-of-way easements, and sales of valuable materials other than timber (e.g., rock, sand, and gravel), as well as a few smaller miscellaneous revenue sources.

Commercial. Commercial real estate leases on state trust lands generate a steady source of revenue (see **Figure 3.9**). DNR has been fortunate to be able to maintain a $10 million level of revenue from commercial leases in the last three fiscal years, FYs 2010-2012, even in the face of a difficult economy that has been hard on commercial real estate.

Figure 3.9: Upland Lease Revenue
Comparison of Previous Forecast with Current Forecast, FY 2013-2017



	FY 06	07	08	09	10	11	12	13	14	15	16	17
Ag. & Other Prev. For.							25.7	23.9	22.2	22.6		
Ag & Other - Current	17.8	24.4	23.8	22.3	21.3	21.5	26.6	24.7	23.8	24.3	24.7	25.0
Change							0.9	0.8	1.6	1.7		
% Change							4%	3%	7%	7%		
Commercial Prev. For.							10.3	9.5	9.5	9.5		
Commercial - Current	8.4	9.7	9.2	9.4	10.0	10.1	10.3	9.5	9.7	9.9	9.9	9.9
Change							0.0	0.0	0.2	0.4		
% Change							0%	0%	2%	4%		

Based on continued uncertainty about upcoming vacancies, projected commercial lease revenues for the current fiscal year FY 2013 remain unchanged at $9.5 million (see **Figure 3.9**). However, this Forecast projects that commercial lease income will increase to $9.7 million in FY 2014, and then to $9.9 million for FYs 2015-2017. The upside and downside risks to the future commercial lease revenue projections are deemed to be in balance.

Agricultural and Other. Revenues from agricultural and other (non-commercial) upland leases were $21.4 million for FY 2011 and $26.5 million for FY 2012 (see **Figure 3.9**). A more detailed breakdown of these revenues over the last two fiscal years is shown below:

	FY 2011	FY 2012	Percent of FY 2011-12 Total
Agricultural	$13,058,000	$17,471,000	63.7
Irrigated	*3,895,000*	*5,762,000*	*20.1*
Orchard/Vineyard	*4,148,000*	*5,922,000*	*21.0*
Dryland	*5,015,000*	*5,788,000*	*22.6*
Grazing	662,000	850,000	3.2
Special forest products	424,000	567,000	2.1
Special use	1,818,000	2,132,000	8.2
Communication site	3,958,000	3,814,000	16.2
Right-of-Way	433,000	634,000	2.2
Mineral, oil, and gas	282,000	147,000	0.9
Rock, sand, and gravel	595,000	877,000	3.1
Other[4]	181,000	135,000	0.7
Total	$21,420,000	$26,541,000	

FY 2012 was a record year for revenues from agricultural leases—due to a combination of a record year for irrigated crop lease revenues, an excellent year for orchard and vineyard lease revenues, and the second highest year from dryland crop lease revenue. Note in the data above that all three agricultural categories generated revenues between $5.75 million and $6 million last fiscal year. Also notable in FY 2012 is a rebound in revenues from rock, sand, and gravel leases, reflecting increasing construction trends in the economic recovery.

For FY 2013, several adjustments are made to the projected revenues in the various agricultural and other uplands leasing categories. First and largest, agricultural revenues are raised by approximately $1.8 million based on the strong FY 2012 performance and preliminary assessments for FY 2013. A net adjustment of $1.65 million is made to account for DNR's decision to drop the proposed sale of communication site improvements. Other smaller positive adjustments result in a $0.8 million increase in projected FY 2013 revenues (see **Figure 3.9**).

Projected revenues in the agricultural and other categories for FY 2014 and FY 2015 are raised by $1.6 million and $1.7 million respectively (see **Figure 3.9**). The main drivers for these increases are 1) adding back in revenue which will be maintained now that the proposed sale of the communication site improvements has be cancelled, 2) including prospective agricultural revenue anticipated from the pending Ice Harbor land acquisition and the recently-completed Sandpiper land acquisition, and 3) adding revenue anticipated from a new high-value rock pit lease to Clark County.

[4] "Other" is composed of smaller miscellaneous revenue sources including habitat and conservation leases, trespasses, assessment payments, pass-through power charges, biomass, and others.

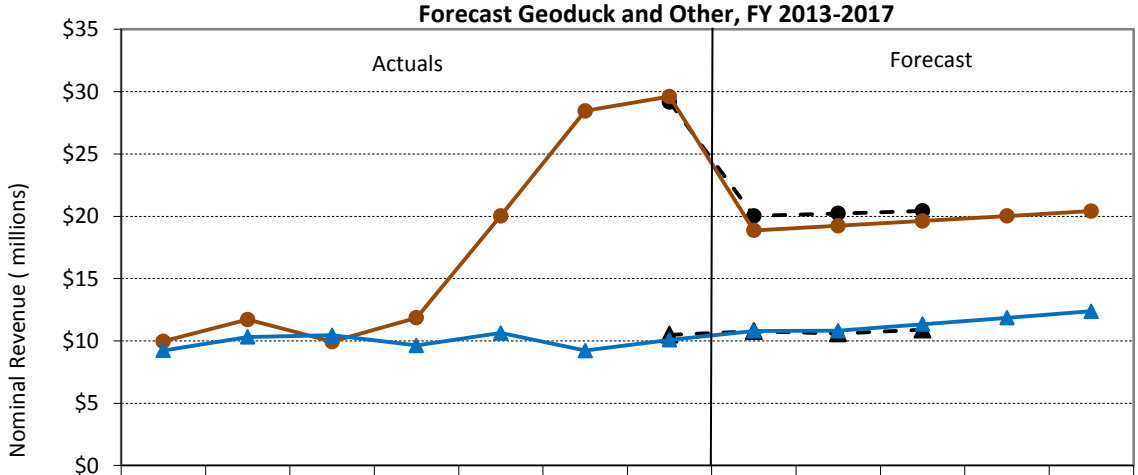
Aquatic lands revenues

Geoduck Revenues. FY 2012 geoduck revenues were $0.46 million more than the $29.2 million projected in the June Forecast (see **Figure 3.10**). To account for lower average prices in the last three auctions—and in consideration of the return of price instability to the market—the projected unit price for geoducks in FY 2013 is revised downward from $9.29/lb. to $8.75/lb., with a two percent annual increase for FYs 2014-2017. As a result of lowering the projected average geoduck auction prices, geoduck revenues for FYs 2013-2017 are expected to be $18.9 million, $19.2 million, $19.6 million, $20.0 million, and $20.4 million respectively.

However, there are several downside risks that are difficult to forecast:

1. Harvests (and therefore revenues) could be deferred or lost if geoduck beds are closed due to occurrence of the paralytic shellfish poisoning (PSP) toxin.
2. A further slowdown in China's economic growth could lower demand for this luxury consumption item in its predominant end market.
3. In light of WDFW surveys of closed south Puget Sound geoduck tracts showing slowed or declining recovery rates in recent years, and of evidence of active poaching, future commercial harvest levels may be reduced.

Figure 3.10: Aquatic Lands Revenues Forecast Geoduck and Other, FY 2013-2017



	FY 06	07	08	09	10	11	12	13	14	15	16	17
Geoduck Previous							29.2	20.0	20.2	20.4		
Geoduck Forecast	10.0	11.7	9.9	11.9	20.0	28.5	29.6	18.9	19.2	19.6	20.0	20.4
Change							0.5	-1.2	-1.0	-0.8		
Other Previous							10.5	10.8	10.6	10.9		
Other Forecast	9.2	10.3	10.5	9.6	10.6	9.2	10.1	10.8	10.8	11.3	11.9	12.4
Change							-0.4	0.0	0.2	0.4		

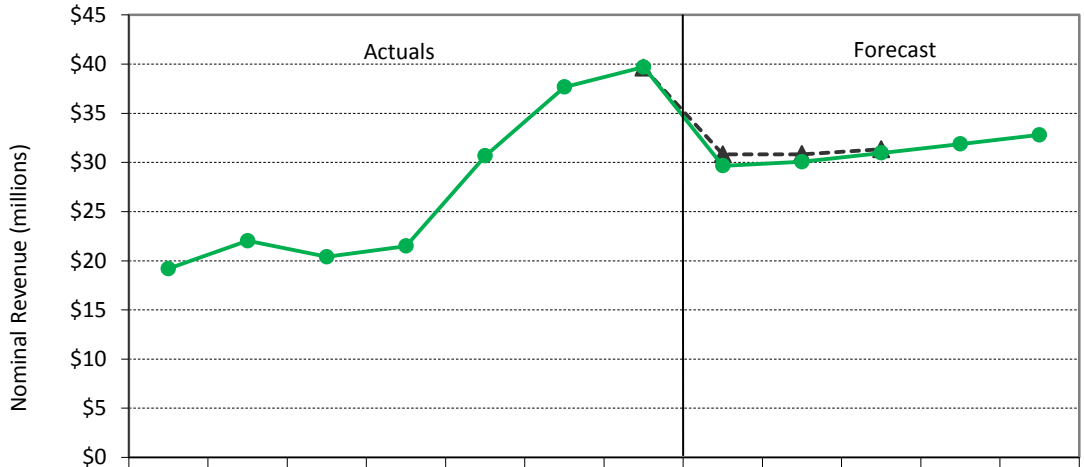
Lease and Other Revenues. DNR manages 2.6 million acres of state-owned aquatic lands for the benefit of the people of Washington. Where appropriate, these aquatic lands may be managed to generate revenue to the state. Besides auctions selling the rights to harvest geoducks, there are several other categories of revenues generated on the state's aquatic lands:

1. Water dependent leases (e.g., marinas and buoys);
2. Non-water dependent leases (e.g., structures related to upland uses);
3. Aquaculture leases (e.g., oyster and salmon "farming");
4. Easements (e.g., powerline rights of way); and
5. Other (e.g., sand and gravel sales and trespass settlements).

Actual revenues in FY 2012 were $10.1 million, or $0.4 million below the June Forecast. While the forecast for FY 2013 is unchanged, revenues in these categories are forecast to be modestly higher in the outlying years. The revenue in these other aquatic lands categories is projected to total $20.9 million in the current 2011-2013 Biennium, $22.1 million in the 2013-2015 Biennium, and $24.3 million in the 2015-2017 Biennium (see **Figure 3.10**).

Figure 3.11 shows annual actual and forecast revenues for all aquatic revenue sources (geoduck and other) combined. Total projected revenues for all aquatic lands programs are down $1.2 million to $69.4 million for the 2011-2013 Biennium, down $1.1 million to $61.0 million for the 2013-2015 Biennium, and are $64.7 million for the 2015-2017 Biennium.

Figure 3.11: Aquatic Lands Revenues
Comparison of Previous Forecast with Current Forecast, FY 2013-2017

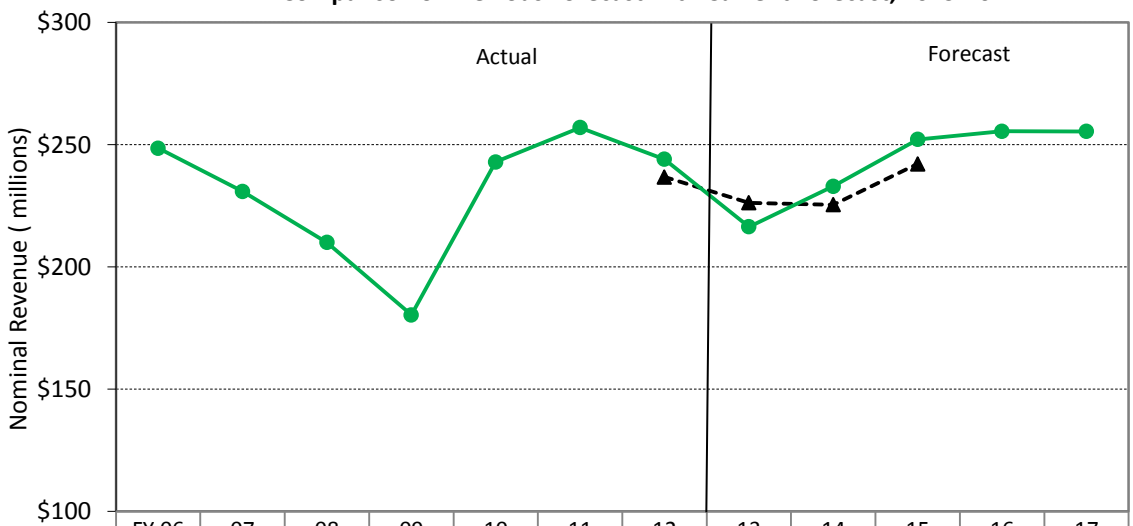


	FY 06	07	08	09	10	11	12	13	14	15	16	17
Previous Forecast							39.6	30.8	30.8	31.3		
Current Forecast	19.2	22.0	20.4	21.5	30.7	37.7	39.7	29.7	30.1	31.0	31.9	32.8
Change							0.0	-1.1	-0.8	-0.4		
Percent Change							0%	-4%	-2%	-1%		

Total revenues from all sources

Total forecast revenues from DNR-managed lands for the current 2011-2013 Biennium (FYs 2012 and 2013) are down from the June Forecast by $2.6 million, or 0.5 percent, to $460.6 million (see **Figure 3.12**). Forecast revenues for the 2013-15 Biennium (FYs 2014 and 2015) are up from the previous Forecast by $16.8 million (four percent) to $484.5 million. Revenues for the 2015-2017 Biennium—now projected for the first time—are estimated to total $510.0 million.

Figure 3.12: Total Revenues
Comparison of Previous Forecast with Current Forecast, 2013-2017



	FY 06	07	08	09	10	11	12	13	14	15	16	17
Previous Forecast							236.8	226.3	225.5	242.2		
Current Updated	248.6	230.9	210.1	180.4	243.0	257.0	244.1	216.5	233.0	252.2	255.5	255.4
Change							7.3	(9.8)	7.5	10.0		
% Change							3%	-4%	3%	4%		

Some caveats

DNR strives to produce the most accurate and objective projections possible, based on the Department's current policy directions and available information. Actual revenues will depend on future policy decisions made by the Legislature and the Department, as well as on market and other conditions beyond DNR's control. Listed below are issues that could potentially impact future revenues from DNR-managed lands:

U.S. and Global Economic Crisis. After offering some encouragement earlier in the year, the budding U.S. economic recovery has proceeded in fits and starts. The fragile economy faces various serious challenges—there are still too many unemployed workers, the European financial crisis drags on, China's economy is slowing, political gridlock paralyzes Washington D.C., and state and local government employee cutbacks continue. Recent initiatives by the Federal Reserve and Japan's central bank offer some encouragement.

U.S. Housing Market. New housing starts are finally creeping up from the historically low and flat level of the last three years. But the housing recovery is sluggish and it remains uncertain when a significant breakout will occur. Home prices are finally rising in most locales. Inventories of homes for sale are dropping, but foreclosed residential properties will continue to weigh down the housing market for some time.

Timber Sales Volume. Falling short of the revised timber sales volume projections due to prospective environmental and policy issues remains the largest risk to the Forecast.

As events and market conditions develop, DNR will incorporate new information into future Forecasts. At this point, we judge the downside to the overall forecast to be greater than the upside because of the risks to the timber sales volume (and therefore to timber removal volume and revenues) as well as the ongoing weakness and vulnerabilities of the U.S. and world economies.

Distribution of revenues

The distribution of timber revenues by trust are based on:

- The value of timber in the inventory (sales sold but not yet harvested) by trust;
- The volumes of timber in planned sales for FYs 2013 and 2014 by trust; and
- The estimated distribution of the sustainable harvest for FY 2015-2017 by trust.

Since a single timber sale can be worth over $3 million, dropping, adding, or delaying even one sale can represent a significant shift in revenues to a specific trust fund.

Distributions of upland and aquatic lease revenues by trust are assumed to be proportional to historic distributions unless otherwise specified.

Management Fee Deduction. The underlying statutory management fee deductions to DNR as authorized by the legislature are up to 25 percent, as determined by the Board of Natural Resources (Board), for both the Resources Management Cost Account (RMCA) and the Forest Development Account (FDA). In budget bills, the Legislature has authorized a deduction of up to 30 percent to RMCA since July 1, 2005, now in effect through the current 2011-2013 Biennium.[5]

At its April 2011 meeting, the Board adopted a resolution to reduce the RMCA deduction from 30 to 27 percent and the FDA deduction from 25 to 23 percent. At its July 2011 meeting, the Board decided to continue the deductions at 27 percent for RMCA (so long as this rate is authorized by the legislature) and at 23 percent for FDA. At its October 2011 meeting, the Board approved a resolution to reduce the FDA deduction from 23 to 21 percent.

Given this background of official actions by the legislature and the Board, the management fee deductions assumed in this Forecast are:

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
FDA	23/21*	21	21	21	21	21
RMCA	27	27	27	27	27	27

*23% through 10-10-11, changing to 21% effective 10-11-11

By using 27 percent for the RMCA deduction in FYs 2014-2017, the Forecast assumes that the Legislature will approve RMCA deductions of up to 30 percent for the 2013-2015 and 2015-2017 Biennia in their biennial budget bills, continuing its practice which started in FY 2006.

Changes to the RMCA and FDA management fee deductions will be incorporated into future Forecasts as appropriate to reflect future actions by the Legislature and the Board.

[5] The Legislature most recently authorized the RMCA deduction of up to 30 percent, making it effective through the entire 2011-2013 Biennium, in the FY 2012 supplemental operating budget, Sec. 927, 3ESHB 2127.

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Revenue forecast tables

Tables 3.1 and 3.2 on the following pages provide Forecast details. **Table 3.1** focuses on the source of revenues and **Table 3.2** focuses on the distribution of revenues. Both tables include historical and projected figures.

Table 3.1: September 2012 Forecast by Source (millions of dollars)

Changes are from June 2012 Forecast

	Actuals					Forecast				
Timber Sales	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17
Volume (mmbf)	660	541	730	591	553	560	562	587	587	587
Change					(0)	(20)	-	-		
% Change					0%	-3%	0%	0%		
Price ($/mbf)	$247	$174	$245	$339	$296	$280	$315	$335	$319	$308
Change					-$5	$6	$15	$35		
% Change					-2%	2%	5%	12%		
Value of Timber Sales	**$ 163.0**	**$ 94.0**	**$ 178.5**	**$ 200.4**	**$ 163.7**	**$ 156.7**	**$ 177.0**	**$ 197.0**	**$ 187.2**	**$ 181.0**
Change					$ (2.7)	$ (2.1)	$ 8.3	$ 20.8		
% Change					-2%	-1%	5%	12%		

Timber Removals	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17
Volume (mmbf)	504	506	801	670	511	538	582	601	581	587
Change					2	(23)	9	(9)		
% Change					0%	-4%	2%	-1%		
Price ($/mbf)	$311	$249	$221	$275	$321	$283	$291	$311	$325	$320
Change					$4	-$5	$6	$18		
% Change					1%	-2%	2%	6%		
Timber Revenue	**$ 156.6**	**$ 127.2**	**$ 181.0**	**$ 187.8**	**$ 167.5**	**$ 152.6**	**$ 169.4**	**$ 187.1**	**$ 189.1**	**$ 187.8**
Change					$ 6.3	$ (9.5)	$ 6.4	$ 8.3		
% Change					4%	-6%	4%	5%		

Lease Revenue	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17
Agricultural and Other Upland	$ 23.8	$ 22.3	$ 21.3	$ 21.5	$ 26.6	$ 24.7	$ 23.5	$ 23.9	$ 24.2	$ 24.5
Change					$ 0.9	$ 0.8	$ 1.3	$ 1.3		
% Change					4%	3%	6%	6%		
Commercial	$ 9.2	$ 9.4	$ 10.0	$ 10.1	$ 10.3	$ 9.5	$ 9.7	$ 9.9	$ 9.9	$ 9.9
Change					$ 0.0	$ -	$ 0.2	$ 0.4		
% Change					0%	0%	2%	4%		
Aquatic Lands	$ 20.4	$ 20.9	$ 30.8	$ 37.7	$ 39.6	$ 29.7	$ 30.1	$ 31.0	$ 31.9	$ 32.8
Change					$ (0.0)	$ (1.1)	$ (0.8)	$ (0.4)		
% Change					0%	-4%	-2%	-1%		
Total Lease Revenue	**$ 53.4**	**$ 52.6**	**$ 62.1**	**$ 69.2**	**$ 76.5**	**$ 63.9**	**$ 63.3**	**$ 64.7**	**$ 66.0**	**$ 67.2**
Change					$ 0.9	$ (0.3)	$ 0.8	$ 1.3		
% Change					1%	-1%	1%	2%		

Total All Sources	**$ 210.0**	**$ 179.8**	**$ 243.1**	**$ 257.0**	**$ 244.0**	**$ 216.5**	**$ 232.7**	**$ 251.8**	**$ 255.0**	**$ 254.9**
Change					$ 7.3	$ (9.8)	$ 7.2	$ 9.6		
% Change					3%	-4%	3%	4%		

Note: Timber removal revenue includes FIT (forest improvement timber) sale proceeds, timber sales default settlements, and interest and extension charges (approx. $1-4 million per year).
Excludes Trust Land Transfer, Real Property Replacement Account, and Land Bank property transactions and interest on property replacement funds.
Excludes fire assessments, permits, and fees.
Totals may not add due to rounding.
Draft report - subject to change without notice

Table 3.2: September 2012 Forecast by Fund (In millions of dollars)

Changes are from June 2012 Forecast		Actuals					Forecast				
Management Funds		FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17
041	RMCA - Uplands	$ 32.0	$ 26.5	$ 31.8	$ 33.9	$ 29.7	$ 29.0	$ 31.8	$ 34.2	$ 33.8	$ 33.2
	Change					$ 0.8	$ (0.9)	$ 1.2	$ 1.3		
	% Change					3%	-3%	4%	4%		
041	RMCA - Aquatic Lands	$ 8.6	$ 8.9	$ 13.9	$ 17.5	$ 18.4	$ 13.2	$ 13.4	$ 13.8	$ 14.1	$ 14.5
	Change					$ 0.2	$ (0.6)	$ (0.4)	$ (0.3)		
	% Change					1%	-4%	-3%	-2%		
014	FDA	$ 18.6	$ 17.3	$ 25.9	$ 25.8	$ 20.9	$ 17.1	$ 18.5	$ 20.9	$ 22.0	$ 22.4
	Change					$ 1.0	$ (1.3)	$ 0.9	$ 0.9		
	% Change					5%	-7%	5%	4%		
Total Management Funds		**$ 59.2**	**$ 52.7**	**$ 71.6**	**$ 77.1**	**$ 69.0**	**$ 59.2**	**$ 63.6**	**$ 68.9**	**$ 70.0**	**$ 70.1**
	Change					$ 1.9	$ (2.8)	$ 1.7	$ 2.0		
	% Change					3%	-4%	3%	3%		

Current Funds		FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17
113	Common School Construction	$ 56.6	$ 41.5	$ 47.9	$ 56.5	$ 56.5	$ 56.6	$ 62.7	$ 68.7	$ 67.9	$ 65.7
	Change					$ 1.3	$ 0.1	$ 3.0	$ 3.2		
	% Change					2%	0%	5%	5%		
999	Forest Board Counties	$ 52.5	$ 48.6	$ 67.9	$ 70.5	$ 64.7	$ 55.8	$ 58.8	$ 64.1	$ 66.8	$ 68.5
	Change					$ 2.3	$ (3.0)	$ 2.4	$ 3.4		
	% Change					4%	-5%	4%	6%		
001	General Fund	$ 3.0	$ 1.4	$ 5.0	$ 4.2	$ 4.5	$ 2.0	$ 2.4	$ 3.1	$ 3.5	$ 3.4
	Change					$ 0.8	$ (0.7)	$ 0.1	$ 0.3		
	% Change					22%	-26%	3%	12%		
348	University Bond Retirement	$ 2.3	$ 3.4	$ 1.8	$ 1.3	$ 0.8	$ 1.3	$ 2.0	$ 1.9	$ 1.7	$ 1.9
	Change					$ (0.1)	$ (0.3)	$ 0.0	$ (0.2)		
	% Change					-11%	-18%	2%	-9%		
347	WSU Bond Retirement	$ 1.2	$ 1.6	$ 1.2	$ 1.4	$ 1.8	$ 1.4	$ 1.3	$ 1.3	$ 1.4	$ 1.4
	Change					$ 0.6	$ 0.3	$ 0.2	$ 0.2		
	% Change					44%	25%	19%	18%		
042	CEP&RI	$ 3.8	$ 3.8	$ 5.6	$ 4.9	$ 5.0	$ 5.2	$ 4.8	$ 4.1	$ 4.2	$ 4.9
	Change					$ (0.0)	$ (1.2)	$ (0.2)	$ (0.4)		
	% Change					-1%	-19%	-4%	-8%		
036	Capitol Building Construction	$ 5.2	$ 5.7	$ 8.7	$ 8.7	$ 8.8	$ 5.2	$ 5.8	$ 6.9	$ 7.4	$ 7.3
	Change					$ 0.6	$ (0.5)	$ (0.0)	$ 0.5		
	% Change					7%	-9%	0%	7%		
061/3	Normal (CWU, EWU, WWU, TESC)	$ 0.1	$ 0.1	$ 0.1	$ 0.1	$ 0.1	$ 0.1	$ 0.1	$ 0.1	$ 0.1	$ 0.1
	Change					$ (0.0)	$ 0.0	$ 0.0	$ 0.0		
	% Change					-19%	13%	6%	6%		
Other Funds		$ 0.2	$ 0.4	$ 0.1	$ 0.1	$ 0.1	$ 0.0	$ 0.2	$ 0.2	$ 0.2	$ 0.1
	Change					$ 0.1	$ (0.0)	$ 0.0	$ (0.1)		
	% Change					532%	-17%	5%	-30%		
Total Current Funds		**$ 125.0**	**$ 106.5**	**$ 138.3**	**$ 147.6**	**$ 142.3**	**$ 127.7**	**$ 138.0**	**$ 150.5**	**$ 153.1**	**$ 153.3**
	Change					$ 5.4	$ (5.4)	$ 5.5	$ 7.0		
	% Change					4%	-4%	4%	5%		

(Continued)

Table 3.2 (Continued): June 2012 Forecast by Fund (In millions of dollars)

Changes are from June 2012 Forecast		Actuals					Forecast				
Aquatic Lands Enhancement Account		FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17
02R		**$ 11.7**	**$ 12.0**	**$ 16.8**	**$ 20.2**	**$ 21.2**	**$ 16.5**	**$ 16.7**	**$ 17.2**	**$ 17.7**	**$ 18.3**
	Change					$ (0.2)	$ (0.6)	$ (0.3)	$ (0.1)		
	% Change					-1%	-3%	-2%	-1%		

Permanent Funds		FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17
601	Agricultural College Permanent	$ 4.3	$ 2.9	$ 6.1	$ 2.9	$ 3.2	$ 3.9	$ 4.6	$ 5.2	$ 4.7	$ 4.2
	Change					$ (0.1)	$ (0.4)	$ 0.1	$ 0.3		
	% Change					-3%	-10%	3%	6%		
604	Normal School Permanent	$ 3.1	$ 2.5	$ 4.0	$ 3.0	$ 3.1	$ 1.5	$ 1.8	$ 2.4	$ 2.6	$ 2.4
	Change					$ 0.6	$ (0.6)	$ (0.2)	$ 0.2		
	% Change					24%	-28%	-9%	8%		
605	Common School Permanent	$ 0.2	$ 0.3	$ 0.4	$ 0.2	$ 0.3	$ 0.3	$ 0.3	$ 0.3	$ 0.3	$ 0.3
	Change					$ (0.2)	$ (0.2)	$ (0.2)	$ (0.2)		
	% Change					-44%	-40%	-36%	-37%		
606	Scientific Permanent	$ 6.0	$ 2.8	$ 5.1	$ 5.7	$ 4.6	$ 6.7	$ 7.3	$ 7.1	$ 6.3	$ 5.9
	Change					$ (0.2)	$ 0.1	$ 0.5	$ 0.3		
	% Change					-4%	1%	8%	5%		
607	University Permanent	$ 0.5	$ 0.1	$ 0.7	$ 0.3	$ 0.3	$ 0.7	$ 0.5	$ 0.4	$ 0.4	$ 0.4
	Change					$ (0.0)	$ 0.0	$ 0.1	$ 0.1		
	% Change					-5%	5%	15%	45%		
Total Permanent Funds		**$ 14.1**	**$ 8.6**	**$ 16.3**	**$ 12.1**	**$ 11.4**	**$ 13.1**	**$ 14.4**	**$ 15.3**	**$ 14.2**	**$ 13.3**
	Change					$ 0.1	$ (1.1)	$ 0.4	$ 0.7		
	% Change					1%	-8%	3%	5%		

Total All Funds	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17
Total	**$ 210.0**	**$ 179.8**	**$ 243.1**	**$ 257.0**	**$ 244.0**	**$ 216.5**	**$ 232.7**	**$ 251.8**	**$ 255.0**	**$ 254.9**
Change					$ 7.3	$ (9.8)	$ 7.2	$ 9.6		
% Change					3%	-4%	3%	4%		

Note: Excludes Trust Land Transfer, Real Property Replacement Account, and Land Bank property transactions and interest on property replacement funds.
Excludes fire assessments, permits, and fees.
Totals may not add due to rounding.
Draft report - subject to change without notice